

The American Journal of Pharmaceutical Education

**The 1948 Meetings will be held in San Francisco
during the week beginning August 8**

THE PROGRAM NUMBER

**THE OFFICIAL PUBLICATION OF THE AMERICAN
ASSOCIATION OF COLLEGES OF PHARMACY**

**"The basis of education is the pupil's belief in the teacher."
—Arthur Graham Glasgow.**

Volume XII

July, 1948

Number 3

INSTITUTIONS HOLDING MEMBERSHIP IN THE AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY

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Alabama Polytechnic Institute, School
of Pharmacy, Auburn. (1905)*
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California

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Pharmacy, San Francisco. (1942)
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University of Southern California,
College of Pharmacy, Los Angeles.
(1918)
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Colorado

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Pharmacy, Boulder. (1921)
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Pharmacy, New Haven. (1935)
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District of Columbia

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macy, Washington. (1926)
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Florida

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macy, Gainesville. (1925)
Perry A. Foote, Dean

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macy, Athens. (1928)
Robert C. Wilson, Acting Dean

Idaho

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Earl R. Series, Dean

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macy, Indianapolis. (1927)
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Purdue University, School of Phar-
macy, Lafayette. (1901)
Glenn L. Jenkins, Dean

Iowa

Drake University, College of Phar-
macy, Des Moines. (1942)
Russell E. Brillhart, Dean
State University of Iowa, College of
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macy, Lawrence. (1900)
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Xavier University, College of Phar-
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troit. (1923)
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Big Rapids. (1928)
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Allied Sciences, St. Louis. (1900)
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State University of Montana, School
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Pharmacy, Omaha. (1916)
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* Denotes year institution was admitted to the Association.

THE AMERICAN JOURNAL
OF
PHARMACEUTICAL EDUCATION

Volume XII

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Published quarterly by the American Association of Colleges of Pharmacy at Lincoln 8, Nebraska. (Clafin Printing Company.) Subscription price \$4.00. Single copies \$1.00. Entered as second class matter July 1, 1937, at the postoffice at Lincoln 8, Nebraska, under the Act of August 24, 1912.

Editorial Office: College of Pharmacy, University of Arizona, Tucson, Arizona.
Address all communications to the Editor.

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Pharmacy at the Crossroads^{*}

JAMES S. HILL

Niagara Falls, New York

Pharmacy, since the days of the depression, has come a long way in efficient organization—both commercially and professionally. The A.Ph.A. and the N.A.R.D. are at an all time high in membership. The state associations today have the largest membership of any time and the pharmacists attending conventions are breaking records each year. The drug-stores of the United States did an estimated four billion volume against one and half billion in 1939. Prescription business has increased from an average of 5 per store per day to approximately 15 per store per day. The individual pharmacist has acquired the "New Look." From a haggard, beaten-down, underpaid, overworked individual he has emerged, in the last decade, a smiling, confident, substantially paid, not dangerously overworked human being, enjoying in many cases a professional status and professional pride that has permeated even into our high school students. Today, the pharmacy schools can pick the best one out of three applicants for the freshman class.

Naturally, every one is hoping and praying that conditions in pharmacy will continue along these lines, always with an upswing, but you and I know that this does not happen just by chance. It takes thought, sacrifice and effort on our part. It takes planning, not just six months or a year, but planning for 5 or 10 years. With world conditions the way they are, the uncertainties, the fears, it is necessary that pharmacy take an objective look at its future and seriously consider its position in the field of public health, and the contribution that it is willing to make toward a better health service.

^{*} Read before the Northern Ohio Branch of the A. Ph. A. at Cleveland, April 9, 1948.

I'm sure you believe—I know that I do—that pharmacy stands at the pinnacle in its service to public health. Before the advent of sulfas and penicillin, the physician prescribed drugs, in most cases, to alleviate pain and keep the patient comfortable while nature took its course. At the present time the doctor can, in a large variety of cases, predict the day and sometimes the hour when the patient's temperature will be back to normal and he will be well on the way to recovery. This is a great advance in medicine, from a psychological standpoint. The public, for so many years, spent their money on patent medicines, going from one to another, trying to find the cure-all that would meet and remedy their specific condition, and egged on, as you remember, by outlandish claims in newspapers, and later radio, advertising. A large proportion of this medical trial-and-error has been eliminated. The introduction of sulfas and penicillin, the improvement of the labeling laws by the Pure Food & Drug Administration, the control of advertising, all have aided in better public health. The fact that the public has experienced and acquired a new faith in the physician and the pharmacist, through the use of present day medication has caused the flocking of sick people to the physician and subsequently their arrival at the pharmacy with a prescription. If it were possible to compile statistics on the amount of lost time from sickness saved through the use of newer drugs I feel it would run into millions of hours, and at present rates of pay, would amount to more than the annual bill the public spends on prescriptions. If this is true, and I honestly believe it is, then we are economically one of the main vertebrae in the backbone of our nation.

While war stimulated research and discovery of priceless new drugs, it retarded the advancement of the educational program. It is impossible to have our youth fight a war and get a professional education at the same time. The Federal Government, with its G. I. Bill of Rights, is helping to remedy the lack of graduates. The American Foundation for Pharmaceutical Education is supplementing this with scholarships

to encourage graduate work leading toward a teaching career so that we may have adequate staffs to properly handle the influx of undergraduate students. So far, so good. But in our effort to fill the gap caused by the war, our pharmacy syllabus and our educational program has remained static. I realize that programs cannot be changed over-night, but educators and retailers must concern themselves with planning future programs. It will be very easy, when our pharmacy ranks are filled, to relax and allow our plans to be pigeon-holed. Complacency is a human trait, when the pressure's off.

If we took a survey of the pharmacists assembled here, and asked each of you what the pharmacy colleges should teach our future pharmacists, the variance in response would nearly total the number of individuals. If this assumption is true, then we are not in agreement at all on what education is required. Let me explain: the pharmacy owner, in too many cases, would like the colleges to teach and train young men and women to do well the many specific tasks that are necessary in a retail pharmacy and to pass the state board examinations. Beyond that, I don't think they are too interested. You realize that if you took your pet dog and spent four years in training him, the neighbors would say he was a pretty smart dog. He could turn somersaults, bark at the right time and do all the tricks that an alert dog can be taught. But I doubt that if the dog were put in a different environment with a different master and in an unusual circumstance, he would react the way his teacher would like. And that's what has happened too often in the past to our graduates. They have been trained rather than educated. Our syllabus should give the student a well-rounded course in the basic sciences and arts, plus up-to-date knowledge in the art of prescription practice, and from graduation on he will continue to progress and educate himself in his chosen field, ready to meet the difficult problems of the future and solve them to the best advantage of himself and pharmacy as a whole. Why? Because he has been educated rather than trained. Retail pharmacists, if they're thinking of the future

of their profession rather than the immediate necessity of having their store covered by a licensed pharmacist, will approve this principle of educating young people to think rather than imitate.

The training of our apprentices is one of the greatest blots that retail pharmacy has placed upon itself during the last thirty years. We retailers as a group (there have been many individual exceptions) have fought on all fronts to see that laws were not passed to force us to give adequate practical training to our apprentices. I personally believe that we should have one year's internship after graduation from a recognized college and that this year's internship should be in a pharmacy qualified by the college or state board, but preferably by both. This directly brings up the point of designating the pharmacies that could qualify both in equipment and staff to proctor these young graduates . . . and we run into a snag. All stores wouldn't be able to qualify. Not all stores would be willing to sacrifice the time and effort necessary in the training program. Not all pharmacists have the ability to teach some one else. Therefore, as has happened in the past in so many pharmaceutical matters, if we can't all do it, no one does it, even though many thinking pharmacists believe that the greatest present-day evil toward the future progress of pharmacy is the complacency, selfishness, and laziness of the retail owner towards his embryo pharmacists.

The Council of the Cincinnati Academy of Pharmacy, in their news bulletin, gave suggestions to their fellow pharmacists to exercise eight rules in handling students and graduates in apprentice training. These were the rules:

1. Limit the student's working hours to such hours as will permit him to fully take care of his studies, allowing also consideration for some hours of recreation and relaxation.
2. Arrange working schedules on a definite basis, taking care not to work the student too late at night.

3. During slack periods, arrange to give the student definite pharmaceutical work to do. Supervise this work. Even the bottling of Castor Oil, Boric Acid Solution, *etc.*, are worthwhile efforts since they teach the student to properly fill and properly label such containers.
4. Allow the student to fill simple prescriptions first. Then let him gradually gain experience in filling those requiring skill in compounding. Take the time each day to do a little of this work. Even if only one prescription is filled daily under supervision the experience gained will mount up.
5. Allow the student to take prescriptions over the phone from time to time so that he becomes acquainted with this important feature of pharmacy. It is preferable to have an extension for supervision by the pharmacist in charge.
6. Let the student visit or write your favorite doctors so that he gains experience in contact work.
7. Be considerate and understanding. Let the student or the graduate ask all the questions he wants to know. Answer them as fully as you can.
8. Remember, the more you help him the more he can later help you.

The New Jersey Board of Pharmacy has started experimenting with an improved method of apprentice training. And there are likely many others. These are steps in the right direction, but until the employer becomes dissatisfied with his own complacency, less selfish, more idealistic and energetic, pharmacy will not reach the heights worthy of it.

Sixty to seventy per cent of our independent pharmacies are one-man stores with no pharmacy personnel problems. The remaining forty to thirty per cent, in their struggle to get ahead, have taken little time to consider employer-employee relationship. Pharmacists are very scarce. To the pharmacy owner needing a pharmacist, they are more precious than

diamonds, and yet he, in too many cases, neglects to study his organization so as to improve or right those conditions that will foster a happy employee and give a feeling of security to him. Shorter hours and adequate pay have been taken care of by the law of supply and demand. There is no reason why shortened hours of employment and adequate pay should not prevail under less favorable economic conditions than now. Also due for consideration are hospitalization, sick insurance, life insurance, round-table discussions of the pharmacy staff, encouragement to join and participate in association meetings both local and state, adequate library, a fund that employees may borrow from during financial distress, all of which tend to make better cooperation between employees and management.

State and National associations have recognized our lack of both public and professional relations. Dr. Searles, in his presidential address, emphasized the importance of the A. Ph. A. setting up a speaking group, pharmacists who would volunteer their time and effort in going out through the different localities and speaking on pharmacy. As I remember the resolution, his emphasis was on speaking to pharmacy groups. That certainly is a start. Dr. Searles, I am sure, had in the back of his mind the using of these speaking engagements as a training circuit for the speakers. We all know that the battle for professional and public recognition has to be fought by the individual pharmacists. We have made a start. More pharmacists are going to their local, state and national conventions than ever before. More pharmacists are stating their opinions at these gatherings. More pharmacists are detailing their physicians. More pharmacists are speaking before other pharmacy groups, although too many are leaving it up to the college professors to do the talking. More pharmacy associations are setting up booths at medical seminars and medical conventions. More localities are having joint meetings with our medical brethren. New York State has set up a statewide Grievance Committee to coordinate uniform ethical practices among the pharmacists, and to publicize our

earnest desire for betterment in public health. All this is to the good. It is a step in the right direction. It will certainly aid us in learning good public and professional relations. Ultimately, though, pharmacists must be trained and be willing to participate in setting up an organized program that will bring pharmacy to the laity. What I mean by that—you, as individual pharmacists, must be willing to take time to prepare a talk on the Barbiturate Law, on Newer Drugs, on the Narcotic Law and such topics, and be willing to give that talk to service clubs, men's supper groups, mixed groups,—in fact, I might say, to anyone who will listen to you. Two months ago I gave a talk to a laymen's group in Lewiston, a neighboring town. I talked for forty minutes and the question and answer period lasted for nearly an hour. It wasn't that the talk was so good; the interest that was stirred up was due to the fact that they had a pharmacist on a rostrum instead of behind a prescription counter. Ever since they were children they had been wondering about the mysteries of pharmacy and here was a member of the clan who was willing to initiate them into the perplexities. They didn't realize the many stages a prescription goes through before it ultimately reaches the patient, the many rules and regulations set up by pharmacy and law to protect the public health. That evening one of the group asked me if I would be willing to give the talk before his wife's Parent-Teacher's Association the following month. So last night I gave the talk over again and I'm still amazed at the interest the public has in pharmacy. And I'm more aware of the golden opportunity that we have been overlooking by not taking the story of pharmacy outside the four walls of our shop. It takes intestinal fortitude, time and perhaps more important—kneeguards, but if we ever expect to acquire and maintain the professional attitude of the public we would like to have, it will be necessary over the years to have pharmacists within our ranks who are willing to sacrifice.

Over the last 25 years, we have had a number of surveys. I think they've all been good for pharmacy. One stands out

in my memory very vividly—the St. Louis Survey. It came out during the years I was thinking of opening a pharmacy and like all prospective owners, I was wondering what type of pharmacy to open. The St. Louis Survey was one of the important factors that influenced me in opening a professional store. Maybe that is the reason why I am sentimental and more than hopeful of our present Pharmacy Survey under Dr. Elliott. I have heard remarks that our present survey is expensive, nearly \$200,000. But should only one hundred pharmacists of the over 75,000 in the United States be able to practice pharmacy more efficiently and more professionally and thereby each earn just \$2000 more, the economic cost, aside from the professional gains, would be attained. Aside from the economic picture, pharmacy has been devoid of statistical data. From the questionnaires coming through, we can be assured of more statistical information than we've had in our past history. The Foundation has supplied the money. The colleges, the state boards and the retailers have, I think, wholeheartedly supplied the information. But unless each division studies the results and applies the findings and accepts the recommendations of the Survey Committee wholeheartedly and with enthusiasm, the spark and spiritual pharmaceutical uplifting that Dr. Elliott and his committee wish to obtain will not be reached. In speaking to the educators, Dr. Elliott said, and I quote, "Pharmacy has got to make up its mind that it is going to carry on its own crusade to be sure it gets its rightful proportion of that very limited number among youth who have the kind of ability that we use as a preface to all our plans. We assume that ability is there. It is there. It has got to be searched out—has got to be smelted out, as it were, under the heat of a personally given inspiration.* That could have been said to retailers just as well as to deans and college presidents. Unless retail pharmacy, which is the well from which our future pharmacists are drawn, makes up its mind that it is going to carry its share of the crusade to get the youth who have the kind of ability and professional fervor to lead us on the forward path,

* *American Journal of Pharmaceutical Education*, Vol. XI, No. 4, p. 822.

we will be stopped at the crossroads. As every one knows, there is no standing still, no stopping—it is either forward, or backward.

The Sixth Annual Meeting of the American Institute of the History of Pharmacy, Inc.

The meeting was held on April 1, 1948, at the Park Hotel, Madison, Wisconsin.

President Arthur H. Uhl cited several examples indicating the growing recognition in this country and abroad, of the Institute as an international center for pharmaceutico-historical endeavor. A suggestion that an assistant to the director to cost around \$3500 annually and clinical help to cost approximately \$1800 elicited a lively discussion. Director Urdang estimated a desirable annual budget, allowing for the issuance of some monographs and of a quarterly devoted exclusively to the history of pharmacy, at \$15,000.

Final action on the amendment creating an associate membership without the right to vote for people residing outside of the Americas, upon the recommendation by two members in good standing, received unanimous approval.

The treasurer, Sylvester H. Dretzka, reported the total receipts for the year to be \$3219.80 and the total disbursements amounted to \$2400.14. The cash balance as per December 31, 1947, was \$1738.68.

The report of the special fund "Pharmacy's Part in Society" showed an income of \$2080.52 and disbursements amounting to \$2080.52, leaving a balance of \$119.48. By unanimous action this special fund was closed and the balance transferred to the general fund.

Dr. Urdang stressed the fact that the correspondence of the Institute was constantly on the increase. The many requests for cooperation coming to the Institute from many groups and many countries is the best indication that it is filling a gap and performing an important service. The meeting then adjourned until the meeting of the body pharmaceutic in San Francisco in August.

Gleanings from the Early History of The Cincinnati College of Pharmacy

HAROLD C. FREKING

Cincinnati College of Pharmacy

The Cincinnati College of Pharmacy was incorporated by legislative enactment of the General Assembly of the State of Ohio on March 23, 1850. The Charter gave to the members of The Cincinnati Pharmaceutical Association the legal right to operate a college of pharmacy. It was the first institution devoted to learning the science of the profession of pharmacy west of the Alleghanies.

The primary objective of the incorporators was expressed in Article 1 of the by-laws. *"Its objects shall be the cultivation, improvement, and diffusion of the science and art of Pharmacy and its collateral branches, by instituting and maintaining a School of Pharmacy; by the acquisition of a library and a suitable cabinet of specimens illustrative of Materia Medica, Chemistry and Pharmacy; by the promotion of good-fellowship and the interchange of knowledge among its members and the profession in general; by the discouragement of the sale or use of inferior medicines; by endeavoring to restrict the dispensing of medicines to properly educated Pharmacists; and by the dissemination of pharmaceutical literature."*

The founders of the College met with considerable opposition at its inception and even the most enthusiastic advocates doubted its permanent survival. This was to be expected in the latter half of the nineteenth century; the time for the cultivation and diffusion of the science of pharmacy had not arrived. Custom and greedy tradition had grasped pharmacy within its tentacles and there were but a few visionary men

* Instructor in the History of Pharmacy and in Commercial Pharmacy at the Cincinnati College of Pharmacy.

who combined the belief in and the fortitude to establish a college of pharmacy. The early advocates for the College met with united resistance on one side and with indifference on the part of their colleagues.

Prominent at this time in their efforts to establish the College were William B. Chapman, M.D., Adolphus Fennel, William J. M. Gordon, M.D., Charles Augustus Smith and Edward S. Wayne, M.D.

The meeting of The American Medical Association in Cincinnati in 1850 is believed to have stimulated the efforts to place pharmacy on a comparable basis with its allied profession of medicine. One can appreciate the resistance encountered by these founders when one considers that midway in the nineteenth century anyone could become a pharmacist without the formality of pharmacy college education or state board examination.

In those days educational facilities in the West were at a low ebb while in the so-called advanced East opportunities for academic education were more plentiful. Cincinnati, at this time, was known as the intellectual center of the West and a definite threat to the culture of Boston, New York and Philadelphia.

The first quarters of the College were located in Gordon's Hall, southwest corner of 8th Street and Western Row (now Central Avenue).

In 1852 there were 534 pharmacists in the State of Ohio and of this number 91 were from Cincinnati, 16 from Cleveland, 10 from Dayton, and 7 from Columbus and the remainder scattered around the state. The only association in the state at this time was The Cincinnati Pharmaceutical Association, and it had 31 pharmacist members out of the total 91 registered in the city.

In 1861, when the prospects for a bright future were envisioned, the dark clouds of civil war put them in total

eclipse. More important and graver questions now claimed the attention of those who had been the mainstays of the College and when they went away to war the College ceased to exist. During the four years of civil strife there were a few who attempted to keep the teaching faculty intact but their efforts met with failure. At the termination of hostilities in 1865, economic conditions were not conducive to intellectual pursuits and the College remained in peaceful slumber.

Efforts were made in the early seventies toward resuscitating the College and these culminated in a meeting of some fifty Cincinnati pharmacists on October 21, 1871, in the Cincinnati Dental College.

At this meeting Professor Edward S. Wayne, M.D., was elected president of The Cincinnati Pharmaceutical Association. It was learned that all the records and property of the old Cincinnati College of Pharmacy had been destroyed by fire. It was pointed out that no advantage could be gained by reviving the old institution. It was decided to start anew under the old name of The Cincinnati College of Pharmacy and a new constitution and set of by-laws was adopted.

The School of Pharmacy rented a room in The Cincinnati College, 257-259-261 Walnut Street and Professor Edward S. Wayne, M.D. delivered the first lecture on the evening of December 4, 1871, to a class of 32 students. Professor Adolphus Fennel was named dean of the College, a position he served with ability and distinction until his death in 1884.

It was about this time that the world-famed scientist and author, John Uri Lloyd was initiated into the science of pharmacy under the able tutelage of Professor William J. M. Gordon, M.D. The method of instruction at that time was known as "round table discussions." The classes were quite informal and covered the entire gauntlet of theoretical and practical pharmacy. Dr. Lloyd later in recalling his student

days said, "one is reminded of the methods of Socrates with his pupils."

In 1872-73 the College had 38 students, and the College was growing rapidly through donations of apparatus by Professors Wayne, Powers, Scheffer and Weightman and by Messrs. Cheney, Myrich and Hobbs & Company.

It was found necessary, at this time, to obtain a special act of incorporation for the institution since the State Corporate Laws required possession of an actual capital of \$5000.00 to be granted the legal right to confer degrees.

This provision caused considerable anxiety to the members of the College who finally resolved to form a stock company with capital stock of \$10,000 divided into 200 shares of \$50.00 each. It was decided that each member would obligate himself to purchase one share of stock to assure continuance of his membership in the College. The Board of Trustees had taken the necessary preliminary action when it was discovered that the original charter issued on March 23, 1850 was still in effect and granted the College all the powers it was now seeking. All that was necessary was a revival of the old College of Pharmacy. With this in mind, a meeting of the entire membership was called by President W. J. M. Gordon, M.D., on May 9, 1872. The following members were present, Professor Edward S. Wayne, Professor Adolphus Fennel, A. J. Tully, Wm. S. Merrell H. M. Merrell, T. L. A. Greve, William Karrmann, Dr. William B. Chapman, James Ayres, A. C. Hill, H. F. Reum, R. M. Byrne and C. M. Helman. At this meeting the old officers resigned and seventy new members were admitted to membership. On May 16, 1872, reorganization was effected with the election of Professor Edward S. Wayne, M.D., as president. During the months of June and July, 1872, the affairs of the organization of 1871 were closed and the institution absorbed by the old Cincinnati College of Pharmacy chartered in 1850.

The next matter demanding the attention of the College was the instituting of a library, the nucleus of which was donated by Professor John F. Judge, M.D.

The Cincinnati College of Pharmacy in the spring of 1873, granted its first degree of Graduate in Pharmacy to the following: Andrew W. Bain, Joseph H. Feemster, Charles E. Ferris, William E. Kiely, Augustus G. Luken, John E. Martin, George D. Pinger, Charles P. Rendigs, Henry Wagner and Gustave Weisbrodt. The first course of lectures for this degree were given in room 9 of the Cincinnati College building. The faculty at that time consisted of Professors Adolphus Fennel, dean, John F. Judge, M.D., F. A. Renz and Edward S. Wayne, M.D.

The Ohio Legislature on May 5, 1873, enacted a bill creating a pharmaceutical examining board that applied only to cities of the first class, and Cincinnati, at that time, was the only city in the State of Ohio rated in that category. (This provision was slightly amended on January 15, 1875, but it still only applied to Cincinnati.)

The College moved to more spacious quarters in the Murdoch Building, 195 West Fifth Street, in 1874. It remained here for about three years. During this time the following subjects were taught: Pharmacy, Chemistry, Botany and Materia Medica. Instruction was on a full five months session with six lectures each week on Monday, Wednesday and Friday evenings from 7½ to 9½ o'clock. Requirements for graduation at this time were: good moral character, 21 years of age, attendance at two full courses of lectures and four years' experience in the retail drug business. The fees at this time were: matriculation, \$5.00; professor's cards (required before student was permitted to attend the lecture), \$10.00; and graduation fee, \$10.00. It was not unusual in those days for instruction to be given in both the classroom and the private homes of the faculty.

Unsuccessful efforts were made, at this time, by the College to secure legislative enactment regulating the practise of pharmacy.

The College and Cincinnati pharmacists mourned the death in 1875 of the illustrious Professor William B. Chapman, M.D., who was the third president of The American Pharmaceutical Association (1854).

In 1876, the College enrolled 76 students and the following colleges of pharmacy, including Cincinnati, were offering pharmaceutical education in the United States: California College of Pharmacy, Chicago College of Pharmacy, Louisville College of Pharmacy, Maryland College of Pharmacy, Massachusetts College of Pharmacy, New York College of Pharmacy, Philadelphia College of Pharmacy and St. Louis College of Pharmacy.

The repetition or duplication of the junior (elementary) courses to the senior (more advanced) courses, then in vogue, was discontinued when the College moved to new quarters at the south-west corner of Fifth and John Street on the fourth floor. The daily trek of four flights of stairs does not appear to have met with the approval of pharmacy students at that time. The course of didactic instruction was supplemented by practical training obligatory upon all students. The personnel of the faculty was enlarged and the course of lectures so divided as to form, separate, junior and senior courses.

The introduction, at this time, of a laboratory course in pharmacy and chemistry added considerably to the operating expenses of the College. Despite lack of finances the College prospered because the faculty was composed of "men who sacrificed themselves at the altar of science." More students were attracted to the school and facilities for teaching pharmacy were taxed to the limit.

It was during the year 1877 that the College made its most progressive step forward with the announcement of its affiliation with The University of Cincinnati (founded in 1874) as the Department of Pharmacy of that institution. During the next ten years, about 260 students were graduated with a degree of Graduate in Pharmacy from the Department of Pharmacy, The University of Cincinnati.

It was during the school term of 1878-79 that the applicant for graduation was now required to have four years of practical experience with some qualified pharmacist in a dispensing pharmacy. In 1879-80 the College announced the first requirement of "an original thesis, well written on some subject pertaining to pharmacy," as a prerequisite for graduation. It was during this period that the College inaugurated the initial laboratory fee of \$20.00.

A course in toxicology was added in 1880-81. The College made its first announcement that ladies were welcome to enroll on the same terms as gentlemen studying pharmacy. In 1881-82, a new course in field botany was added to the curriculum. This course enabled students to take excursions into the country to study plants.

In the research for this paper we came across an interesting document dated in 1882. It revealed the city of Cincinnati had a Pharmaceutical Examining Board that required a graduate of The Cincinnati College of Pharmacy to take an examination before he was permitted to conduct a retail drug-store or apothecary business in the city. We were unable to trace the history of this board but we suspect that the College had political influence at the time because Professor Edward S. Wayne, M.D., was one of the examiners and another of the three was Joseph H. Feemster, one of the graduates in 1873.

Dr. John Uri Lloyd started his teaching career as professor of pharmacy in 1883. The subjects now given were Pharmacy, Chemistry, Botany, Materia Medica, and Toxicol-

ogy. The tuition fees at this time were \$5.00 each for the junior courses in Pharmacy, Chemistry, Botany and *Materia Medica*, and for the seniors in the same courses it was \$15.00 each. The senior course included Toxicology with the *Materia Medica* lecture, and it had a laboratory fee charge of \$20.00 for 60 lessons. Graduation fee was \$10.00.

The year 1884 was notable in several instances. The College mourned the loss of Professor Adolphus Fennel, who was succeeded on the faculty by his son Charles T. P. Fennel, who had graduated with the highest honors two years before. He inaugurated a lecture course in the preparation of extracts, abstracts, pills and the assay of opium and the preparing of physicians' prescriptions. On March 18, 1884, legislation was enacted creating The Ohio State Board of Pharmacy, and Professor Edward S. Wayne, M.D., was one of the original five members appointed to the Board by Governor George Hoadly. Examination and registration of pharmacists became mandatory from this time on in the state of Ohio.

In 1884, Mrs. H. M. Merrell, the first woman graduate of The Cincinnati College of Pharmacy received the degree of Graduate in Pharmacy. Other women followed in her footsteps, including Miss Cora Dow '88 who founded the Dow Drug Company, and Miss Marie Kusnick '97 who, in 1947, is still actively engaged in the practise of her profession in her pharmacy at 3426 River Road. She has rightfully earned the respected title of "the grand lady of Cincinnati Pharmacy."

By 1886 the College had conferred the degree of Graduate in Pharmacy to some 195 students, both men and women. It also announced the appointment of Professor Charles T. P. Fennel as Dean, a position he filled with dignity and ability for 41 years.

The year 1887 opened a new era for the College. After several disappointments, the Board of Directors finally succeeded in establishing a home of its own at 614-618 Court

Street near Wesley Avenue. Here it remained till the close of the nineteenth century (and for 28 years thereafter). The building and grounds were purchased for \$12,000.00, and \$3,040.60 was added for teaching apparatus and furniture. A loan of \$8,000.00 was made and contributions from Cincinnati pharmacists amounted to \$2431.37. The College had in its treasury, at that time, \$4559.09. In this new building there was a lecture hall on the second floor that would seat 400 students. At this time a practical course in microscopy was added to the curriculum, but it was made optional to the students.

In 1888, principally through the efforts of the alumni of The Cincinnati College of Pharmacy, a proposed bill in the Ohio Legislature was defeated. It provided for the licensing as registered pharmacists, without schooling or examination requirements of state board, to anyone who had three or more years' experience in a retail drug store.

The fees were slightly increased in 1888-89. Matriculation remained at \$5.00, but the lectures were \$40.00 per term and the diploma fee was \$15.00. It divided its school year into three terms—fall term, September 20 to December 20; winter term, January 3 to March 28 and summer term, April 3 to graduation exercises in June. Courses were started in practical pharmacy and therapeutics. In 1889-90, microscopy was made an obligatory course and the thesis required for graduation was required not only to be on a subject in Pharmacy, but likewise had to be based upon some experimental work that had been accomplished during the school term. The College began at this time its instruction in the subject of pharmacology.

There are several instances during this and other times that the College would be placed upon the County Auditor's Tax List. One time the College was actually placed upon the delinquent tax list and as such was offered for sale by the sheriff of Hamilton County in payment of alleged delinquent

real estate taxes. However, it was pointed out that the College used its building exclusively for educational purposes and, as such, it was adjudged exempt from real estate taxes.

In 1890 the College joined with the medical, dental and pharmaceutical professions in the City of Cincinnati to raise funds for the building of a professional Assembly Hall, but this never materialized. The College, at this time, pioneered a move to seek internships for junior students in the various local hospitals. The qualification was the highest grades made in the subjects required for admittance to the senior classes. It was during this year that the College realized for the first time the practical need for advertising its educational facilities, and \$250.00 was allotted. It favored a move midway in the 90's to license physicians as pharmacists without formal examination. The Chemistry courses, at this time, were made more practical and more applicable to pharmacy. Christ Hospital announced acceptance of the pharmacy internship proposal of the College. It provided that the junior student who made the highest grades in subjects required for senior standing would be engaged, without salary, as interne pharmacist but that board and lodging would be furnished by the hospital.

On January 13, 1891, the College granted its first honorary membership to Professor John F. Judge, M.D. in recognition of his valued teaching services to the profession of pharmacy. It granted the request of the senior class to use the College insignia on its class pins.

On February 10, 1891, the honorary degree of Doctor of Pharmacy was conferred upon Dean Charles T. P. Fennel in recognition of meritorious services to the College and pharmacy in general. It was during this year that a general average of 75 per cent was required for graduation, but the thesis requirements was dropped for the time being. Discussion was had at this time on the advisability of post-graduate courses in pharmacy at the College. The spring botany

course was dropped from the curriculum in this year. It was also decided, at this time, to fail any student who did not have above an average grade of 60 per cent in all subjects.

A novel innovation, at this time, required all the instructors to submit a written synopsis of the material taught in their courses. Term examinations were inaugurated and all teachers were placed under salary contracts. The affairs of the College had progressed to where it was found necessary to engage the services of an actuary. The College mourned at the end of the year the death of the illustrious instructor Dr. John F. Judge.

In 1892, the movement was proposed to increase the present two year course with a three year curriculum. In 1893, each member of the College was assessed \$25.00 to make up the deficit in the operating expenses incurred during the '92 and '93 terms.

On April 17, 1894, the Alumni Association was formed with A. W. Bain elected as the first president. Through the efforts of this association the College inaugurated a quarterly journal containing scientific articles and items of local and national interest. (The Journal was issued monthly in 1898.) The sum of \$25.00 was appropriated for advertising in the local newspapers enumerating the College's educational features.

An amusing news item in 1895 recorded the fact that in a recent state board of pharmacy examination 33 out of the 34 applicants for pharmacists had been successful. The item states "this breaks the record. A new set of questions is evidently needed."

In 1896, the College sought an amendment to the Poison Law of Ohio seeking the elimination of the word "poison" on the labels of physicians' prescriptions. It received support in this move from the medical and pharmaceutical professions.

Awarding of the coveted College Gold Medal was begun in this year.

In 1897, the College, like other schools, was in a precarious position for funds to continue its operation. The indebtedness at the time amounted to \$7,758.34. On February 3, 1898, it was decided to assess each member \$50.00 to enable the College to continue, but this was not accepted by the members and on March 1, 1898, the College went into voluntary liquidation and each member was held personally liable for his proportionate share of the debt as provided by Section 4 of the Articles of Incorporation.

On March 18, 1898, Dean Charles T. P. Fennel offered to assume personal responsibility for the debts of the College and to release the members from personal liability. This was the start of the College's being a privately-owned institution, but without this personal sacrifice by Dean Fennel the College would have been forced to close. On June 14, 1898, the offer was accepted and Dean Fennel assigned, in trust to John Ruppert and Alfred DeLang, his life insurance policy issued by the Equitable Life Insurance Company in the amount of \$5000.00. In return, it was stipulated that Dean Fennel held a mortgage on the real estate and personal property of the College located at 614-618 Court Street near Wesley Avenue. On September 10, 1898, the College was remodeled and opened for inspection.

On May 27, 1899, the College conferred its first degrees of Bachelor in Pharmacy. This degree supplanted the degree of Graduate in Pharmacy.

The Cincinnati College of Pharmacy, at the close of the nineteenth century, could boast of the following elite of American Pharmacy among its honorary members: Drs. William B. Chapman and John F. Judge, Professor John M. Maisch, Albert E. Ebert, G. F. H. Marko, William Proctor, Jr., and Edward R. Squibb.

Throughout greater Cincinnati and the nation many men and women who have achieved their mark of success in Pharmacy, Medicine, Dentistry, Law, Chemistry, Research and Politics may claim, with pride, The Cincinnati College of Pharmacy as their alma mater.

Scholastic Standards as a Means of Student Selection

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The need for limitation of the enrollments in the colleges of pharmacy, giving the good students, hence pharmacy at large, a better chance, is a subject of primary importance to everyone interested in the future of the profession. This need has become acute in the great majority of our colleges after the enforced low attendance of the war years had been followed by unprecedented enrollments.

In the report of the chairman of the Committee on Problems and Plans of the A.A.C.P.¹, the general feeling of the committee was expressed as follows: —“the present large enrollment in the college is a menace to pharmacy if it should continue at its present level.” Dr. E. A. Brecht of the above committee expressed the view that there were two compelling reasons for limitation of enrollment, (1) the danger of overcrowding and (2) the limitation of faculty and physical facilities of the individual schools.

Since these two basic facts result in another very consequential one, namely the bringing down or keeping down of the educational achievements to the benefit of the average and under average students and to the disadvantage of the

good ones, the necessity as well as the direction of remedying this situation seems to be obvious. Or in other words, the goal as well as the means to reach it lies in asking for certain definite scholastic standards.

A study has been made to determine the proper level of scholarship to be required of students enrolled in the school of pharmacy. The data collected in this study have been intended to serve as a basis for a scholastic standard with regard to the abilities of the students of pharmacy, thus avoiding the arbitrary selection of standards.

The transcripts of all students classified as sophomores, juniors and seniors in the School of Pharmacy of the University of Wisconsin were reviewed at the beginning of the 1947-48 academic year. At that time the transcripts recorded the grades received in all courses up to the end of the previous academic year. Thus, sophomores' transcripts recorded the grades received during the freshman year, juniors' transcripts recorded the grades received during the freshman and sophomore years, and seniors' transcripts recorded all grades received during the freshman, sophomore and junior years.

Consideration in this study was given only to the transcripts of those students who had been in attendance at Wisconsin for at least one semester. From the total grades and credits recorded for a student it was possible to calculate that student's average for all courses. In the case of transfer students, only those grades and credits received in courses taken in residence at Wisconsin were used in calculating the average grade. These average grades are expressed as the point-credit ratio based upon the grade point system as employed by the University of Wisconsin in calculating the numerical averages of all students. A brief explanation of this system is given below:

Grade Point System

Semester grades are reported by letter only; the characterization of grades by plus or minus signs is not authorized.

For the sake of convenience in computing weighted averages each letter grades carries a specific number of points per credit, thus a B in a three-credit subject would yield 6 points. The scale of grades and points follows:

Grade	Percentage Equivalent	Points Per Credit
A - (Excellent)	93-100	3
B - (Good)	85- 92	2
B - (Fair)	77- 84	1
D - (Poor)	70- 76	0
D - (Condition)	60- 69	0
F - (Failure)	Below 60	-1

Point-Credit Ratio: The general quality of a student's work over a number of semesters is expressed in terms of a point-credit ratio, which is the result obtained by dividing the total number of points he had earned by the total number of credits earned. The highest possible quotient is 3.0, which represents a grade of A in every subject; the lowest possible quotient is zero.

All individual point-credit ratios were calculated and then condensed in the form of a table. See Table 1.

It is at once evident that the greatest number of low grade students was in the sophomore class, indicating that the quality of the students in the 3rd and 4th years excels that of the second year students. It is also evident that the mean grade for students in the junior and senior classes is higher than that of the sophomore class. This mean grade extends from 1.2 to 1.7. The establishment of a scholastic standard should fall somewhere between these two figures.

From the data in Table No. 1 it is possible to compute the number of students who attained any selected point-credit ratio. These computations are recorded in Table 2.

Columns 2, 3, 4, and 5 of Table 2 indicate the number of students attaining a point credit ratio equal to or higher

than the point credit ratio listed in Column 1. For example, in the sophomore class, the entire class attained a ratio of 0.5 or higher while only 88 attained a 1.0 or higher ratio. Although a table of this type is of considerable interest and value in recording the achievements of the students, a true picture of the relative abilities of the students cannot be obtained unless one express the achievements on a percentage basis, thus eliminating the factor of class size.

A percentage attainment table has been prepared for the upper 3 classes. See Table 3. This table shows the percentage of students attaining any selected point-credit ratio and conversely, the percentage of students who failed to attain the selected ratio.

Table 1

Point Credit Ratio	Number of Students			Total
	Sophomore	Junior	Senior	
3.0	....	1	....	1
2.9	....	2	1	3
2.8	1	1	0	2
2.7	0	1	5	6
2.6	1	4	0	5
2.5	1	1	1	3
2.4	0	4	2	6
2.3	4	3	3	10
2.2	2	2	2	6
2.1	6	5	3	14
2.0	5	5	3	13
1.9	3	6	0	9
1.8	5	8	3	16
1.7	8	10	2	20
1.6	5	4	5	14
1.5	7	12	6	25
1.4	8	6	6	20
1.3	9	5	6	20
1.2	9	6	12	27
1.1	7	5	4	16
1.0	7	6	4	17
0.5-0.9	9	2	1	12
Totals	97	99	69	265

The figures in columns 2, 3, 4, and 5 indicate the percentage of students who failed to attain the point credit ratios indicated on the same line in Column 1.

By an examination of table 3 it is possible to arrive at the approximate percentage of each class and the student body as a whole, which would be eliminated by the establishment of a definite point-credit ratio as a requisite to enrollment.

In the introduction of this paper, the limitation of faculty and physical facilities of the schools was mentioned as one of the most basic factors demanding student limitation. It follows that a survey of these facilities would help to indicate the total number of students a school should enroll. Any

Table 2

Point Credit Ratio Column 1	Number of Students			Total Column 5
	Sophomore Column 2	Junior Column 3	Senior Column 4	
3.0	0	1	0	1
2.9	0	3	1	4
2.8	1	4	1	4
2.7	1	5	6	12
2.6	2	9	6	17
2.5	3	10	7	20
2.4	3	14	9	26
2.3	7	17	12	36
2.2	9	19	14	42
2.1	15	24	17	56
2.0	20	29	20	69
1.9	23	35	20	78
1.8	28	43	23	94
1.7	36	53	25	114
1.6	41	57	30	128
1.5	48	69	36	153
1.4	56	75	42	173
1.3	65	80	48	193
1.2	74	86	60	220
1.1	81	91	64	236
1.0	88	97	68	253
0.5-0.9	97	99	69	265

number in excess should not be permitted to enroll. It is necessary to determine the number of students enrolled over the maximum capacity and then to express this figure as a percentage of the total student body. By locating this figure on table 3, it is possible to select the point-credit ratio to be required for enrollment.

Thus, if it were found that a school's capacity was 70 students, and the enrollment was 100 students, it would be necessary to eliminate 30 students or 30 per cent of the student body. By referring to Column 5, it can be seen that 34 per cent of the students attained less than a 1.4 ratio and 27 per cent attained less than a 1.3 ratio. It can be concluded that in such a case the standard required should range from 1.3 to 1.4.

Table 3

Point Credit Ratio Column 1	Percentage of Students			
	Sophomore Column 2	Junior Column 3	Senior Column 4	Total Column 5
3.0		99.0%	100 %	99.7%
2.9	100 %	97.0	98.6	98.5
2.8	98.9	96.0	98.6	97.7
2.7	98.9	94.9	91.3	95.5
2.6	97.9	90.9	91.3	93.6
2.5	96.9	89.9	89.9	92.5
2.4	96.9	85.9	87.0	90.2
2.3	92.7	82.8	82.6	86.4
2.2	90.7	80.8	79.7	84.2
2.1	84.5	75.8	75.4	78.9
2.0	79.3	70.7	71.0	74.0
1.9	76.2	64.6	71.0	70.6
1.8	71.1	56.6	66.7	64.5
1.7	62.8	46.5	63.8	56.9
1.6	57.7	42.4	56.5	51.6
1.5	50.5	30.3	47.8	42.2
1.4	42.2	24.2	39.1	34.7
1.3	32.9	19.1	30.4	27.1
1.2	23.7	13.1	13.0	18.1
1.1	16.4	8.0	7.2	10.9
1.0	9.2	2.0	1.4	4.5

It does not seem probable that all schools would wish to reduce their enrollment by 30 per cent. Perhaps 20 to 25 per cent is a more desirable range. Assuming that such is the case, a minimum ratio of 1.25 should be required. A 1.25 requirement at Wisconsin would eliminate approximately 21 per cent of the seniors, 16 per cent of the juniors, and 27 per cent of the sophomores, or 22 per cent of the combined classes.

Of course, it must be recognized that rigid adherence to such a program would result in a number of individual "hardship" cases, many of which would be deserving of proper consideration. It might be desirable to adopt a semi-flexible standard which would allow the admitting officers of the school an opportunity to readmit those students whose special circumstances speak for an exception. However, the adoption of the semi-flexible standard could result in a defeat of the purpose of the entire program.

It is to be borne in mind that the establishment of a certain scholastic standard as a requisite to enrollment should not be considered a final solution to the problem of over-enrollment. An annual compilation and analysis of the grades of the student body is necessary in order to obtain a true picture of the quality and abilities of the students. If such a program is followed, it is not improbable that changes in the standard for admittance may prove to be necessary to meet changing conditions and situations.

Summary and Conclusions:

Having recognized the need for limiting the enrollment in the schools of pharmacy, the establishment of a minimum scholastic standard as a requisite to enrollment appears to be the most desirable method for student selection.

A study was made of the records of the students of the three upper classes of the School of Pharmacy at the University of Wisconsin. The object of the study was the gathering of information essential to the establishment of a min-

imum scholastic standard based upon the achievements of the students of pharmacy.

It was found that the largest number of students attained a point credit ratio from 1.2 to 1.7. The point credit ratios of all students were illustrated by the use of a percentage-attainment table. It was observed from this table that approximately 27 per cent of the students could be eliminated by requiring a 1.3 ratio and 34 per cent by requiring a 1.4 ratio. The table allows a quick orientation as to the consequences of any other, lower or higher ratio chosen.

An inventory of the faculty and physical facilities of a school will help to determine what percentage should be eliminated. By a study and compilation of the grades of all students it is possible to determine the approximate point-credit ratio to be required in order to eliminate the proper percentage of students.

It appears that the collection and study of data of this nature from several of the schools of pharmacy would be a worthwhile project.

¹ Lyman, R. A., Report of the Chairman of the Committee on Problems and Plans, *Am. J. Pharm.* Ed XI, p. 501 (1947).

A Veterans Administration survey disclosed that a total of 13,245 World War II veterans are training in pharmacy under the G. I. Bill. Of the total 12,899 are enrolled in educational institutions and 346 are taking on-the-job training in pharmacies. There were 2,000,000 men studying in schools and colleges in the occupational fields and 546,000 training on-the-job on December 1, 1947. Veterans are eligible for education and training under the G. I. Bill if they served for 90 days in the armed forces between September 16, 1940 and July 25, 1947, and were released under conditions other than dishonorable. The 90 day minimum, however, is waived for veterans if their disabilities were service-connected.

The Classroom Use of the Wire Recorder

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A recording device for use in speech classes has until recently been out of the question for the small school because of the high cost of necessary equipment. With the production of the inexpensive, portable wire-recorder, however, new paths in speech training have been opened to the department with even the most limited budget. At the Philadelphia College of Pharmacy and Science, we have been using the recorder for less than a year, but already it has become an extremely important part of the department.

We have found that the use of the machine in our speech classes has many advantages. It is an aid to the teacher in stimulating interest in a course which is all too frequently viewed by professional or technical "majors" as a necessary evil; in this capacity, the recorder is the auditory counterpart of the mirror, before which we humans so much enjoy self-admiration.

In addition to providing the individual with one of the very necessary supports for his self-esteem, the recorder serves as an invaluable aid to both student and teacher as that which the semanticist would term an extensional definition. For example, A's first prepared talk to the class was delivered in a painfully slow manner; there were long pauses during which he apparently was groping for the next word, pauses that were too often filled with "uh" and "ah." Obviously he needed more preparation, among other things. He was unfamiliar with either his subject or the English language. But whatever the cause, the point was that A did not realize that he was presenting his talk with such a dull, boring delivery. Unless a student can understand what he has done

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incorrectly, he cannot be expected to improve. A's teacher explained the deficiency, provided examples to clarify the explanation, and suggested corrective measure to be followed, but this student's next talk was no improvement. This speech, however, was recorded¹ and on the "playback", A heard himself "uhing" and "ahing"; he noted the long periods of silence and realized then, and, by his own admission, not until then, what was wrong with his delivery. From this point, improvement was more rapid.

This is not an isolated case; the same holds true for the "speeders", the "lollers", and the rest. These people are adhering to speech habits developed over a period of ten or twenty years; few, if any, have had the opportunity for nor felt the need for an analytical "listening" to themselves. Hence, until they are guided into hearing them, beginning speech students fail to recognize in their own talks those "faults" which are not conducive to listening pleasure; they are, however, quick enough to note these in the work of another.

The recorder is not only an aid in defining speech faults, but also has been helpful as a corrective device. With it, the speech teacher and student are able to carry the old suggestion of practicing before a mirror even further. Frequently a student in practicing a talk, fails to make the desirable revisions because he lacks the ability to identify what needs correcting as he says it. He goes on, therefore, blindly practicing the errors over and over until they are well-nigh perfected. With the recorder and guidance available, the student can have his faults pointed out as he listens to them, try again, and then compare the two for corrections made. The advantages of this type of practice over expounding to a mirror and four walls are obvious.

These are but a few of the advantages we have found in less than one year's use of the recorder in our speech classes. The disadvantage, pointed out by one of our students,

¹ Beginning speeches are not recorded because it is felt that there are distractions enough at the start without adding to them a microphone.

"Once you've heard yourself over that thing, it's quite likely that you'll not want ever to speak again," we feel can easily be overcome.

We by no means intend to indicate that the use of the wire recorder will solve all of the speech teacher's problems, but it certainly has alleviated many of ours. Neither do we claim that with it we are producing better pharmacists, but they are pharmacists who are better able to recognize their own speech problems and who, therefore, will be better speakers—and better listeners.

A Survey of Study Habits of First Year Pharmacy Students*

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Edmonton, Canada

The amount of time that a student spends in study outside of scheduled classes and the manner in which he employs that time, is a matter of fundamental significance to his success and therefor of considerable interest to university instructors. This survey was an effort to obtain such information.

The datum was obtained from a class of forty-two students in the first year of the pharmacy course and was collected for a period of twenty-one weeks. This period constituted the entire university teaching semester with the exception of the first three weeks and the last week. The survey did not cover the first three weeks of the term because it was felt that it would take that long for students to adjust them-

* Read before the Conference of Teachers of Pharmacy at the 1947 Meeting in Milwaukee.

selves to university life and to get their study methods organized. The last week of the term was not included since at that time students were beginning to concentrate on the courses that would be examined first and it was felt that this would falsify the over-all picture.

Printed forms were issued to all students on the Monday of each week. These sheets were filled out and handed in the following Monday. The sheets* (see Plate) were prepared so as to give the number of minutes spent each day on each lecture and laboratory course and the manner in which that time was utilized, as follows:—

Lecture Courses:

1. Rewriting and reviewing notes,
2. Outside reading pertaining to course,
3. Assignments and problems.

Laboratory Courses:

1. Study of laboratory theory,
2. Writing reports,
3. Overtime in laboratories,
4. Assignments and problems.

The success and accuracy of this survey depended entirely upon the good-will and cooperation of the students, since the returns had to be handed in anonymously to avoid the fear in the student's mind that the information might be used to his individual disadvantage. A number was drawn from a hat by each student and used by him throughout the year to designate his returns. Students were assured that no effort at identification would be made. In order to maintain interest, charts tracing the progress of the survey, were prepared and posted each week. In this way fullest cooperation was obtained throughout the survey. Since participation was voluntary there was no incentive to hand in an inaccurate record so that it is probable that the information obtained is accurate within the limits of the experiment.

Instructors in the courses were asked to give an estimate of the time they believed that a student should spend in each

* Our thanks are due to Prof. E. O. Lilge, University of Alberta, for permission to copy time-sheets devised by him.

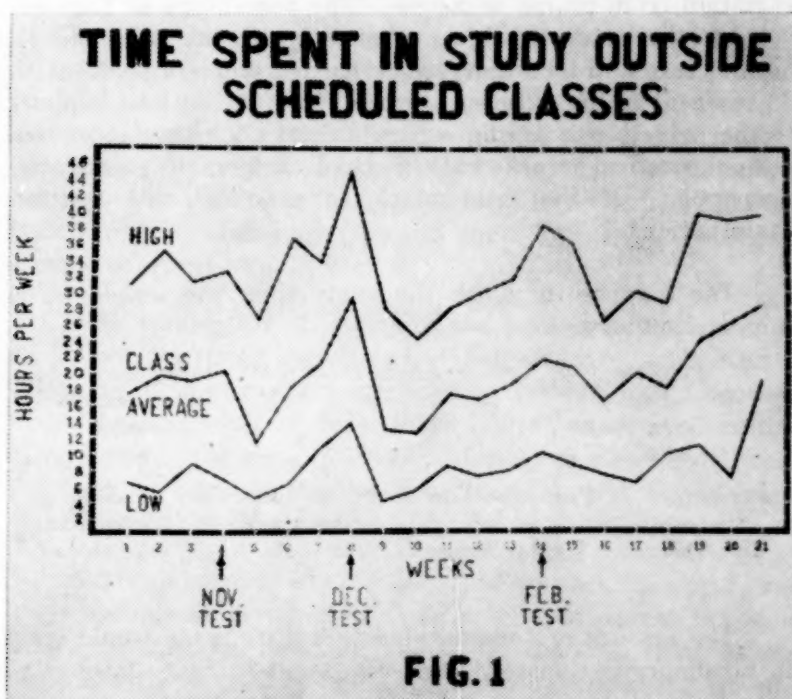
[illegible]

PLATE NO. 1

course. These figures are used for comparison with figures obtained by the survey.

Results

The average time spent in non-scheduled study for the entire semester was 20 hours per week. Figure 1 presents the weekly average each week throughout the term and the high student and low student each week. The weekly average ranges from 12.2 to 29.7 hours per week at different times during the semester. It is interesting to note the peaks in the graph at time of examinations.



An average of 20 hours per week of study time seems to be a reasonable figure if the student is to be able to take part in extra-curricular activities, which also constitute an important part of his education. The figures of study time

are probably higher than would have been obtained before the War, since the class on which the survey was conducted was composed mainly of veterans. It has been our experience that veteran students, in general, apply themselves to their studies with considerably more seriousness and diligence than do civilian students.

It was found that seventy per cent of the study time throughout the year was spent on lecture courses and thirty percent on laboratory work. To use this, however, as a criterion for allocating marks between theoretical and practical work where that is necessary, would be unsound due to marked variation from course to course. The percentage of time devoted to the lecture work, as compared with the total time on both lecture and laboratory work, varied from 48 per cent to 88 per cent in the different courses. This would lend support to the principle of giving separate marks for the laboratory and theoretical work rather than arbitrarily assigning proportions of the final mark to practical and written examinations.

The manner in which the study time was employed is summarized as follows:—

Percentage of Time Spent in Study of Lecture Courses In		
Rewriting & Reviewing Notes	Outside Reading	Assignments & Problems
85.5	6.9	7.6

Percentage of Time Spent in Study on Laboratory Courses In			
Study of Lab. Theory	Writing Reports	Overtime in Labs.	Assignments & Problems
58.6	19.8	9.1	12.5

The amount of time devoted to lecture notes would seem to be disproportionately high compared to time devoted to outside reading. This is an unfortunate tendency on the part of students, but reflects probably also on methods of teaching and examination. It should, however, be realized that this survey was carried out on the junior year, in which courses deal with fundamentals, and it would be expected and hoped

that in the senior years more time would be devoted to outside reading. This, notwithstanding, students in junior years should be urged and required to do more outside reading. The other figures for distribution of time are about what one might expect and do not seem to be seriously out of line, with the possible exception that 9.1 per cent of the time devoted to laboratory work was required in overtime in laboratories.

Efforts were made to obtain information on time spent in extra-curricular activities. Insufficient data were obtained to be of significance, due largely to difficulties of classification of such activities.

The variation from week to week in the individual courses was often vary marked. The peaks of activity corresponded to times of examinations, laboratory tests and specific assignments. This reflects the tendency of students to do last minute "cramming." They tend to neglect their study in a particular course unless there is a specific dead-line to be met. This suggests the advisability of frequent short quizzes, to maintain a more constant level of study.

It is interesting to compare the time actually spent in study with the time believed by the instructors to be necessary. The total of the time recommended by instructors on courses in the first half of the term is 18 hours; on courses in the second half of the term, 23 hours. These recommended times, therefore, are not in marked disagreement with the over-all actually spent of 20 hours.

A breakdown of the figures into courses, however, reveals considerable variation from course to course between time recommended and time spent. If the time spent is expressed as a percentage of the time recommended the following are the figures in the several courses: 53, 47, 116, 170, 80, 56, 70, and 158 per cent.

These figures indicate that whereas some instructors expect much more time to be spent on their courses than students

actually spend, others expect their work to be handled with considerably less time than the students find possible. The closest agreement between time recommended and time spent is 16 per cent and the greatest disagreement is 53. Thus, although, the total figures for time recommended and time spent agree fairly closely, the manner in which that time was proportioned between the several courses varied greatly from what was anticipated by the instructors.

The figures for time spent in the individual courses would not be of significance outside of our department and therefore have not been included. A survey such as this, however, obtains information valuable in weighing courses and in determining if any courses are requiring a disproportionate amount of the student's time. Also, within any one course it supplies the instructor with information of value to him in his teaching; such as the amount of outside reading that students are doing in his course, the amount of overtime required in laboratories, the amount of time devoted to assignments or writing reports.

The time required to carry out a survey such as this is not excessive. We found that once the system of recording was arranged, the checking and calculations could be handled by a stenographer with a calculating machine in approximately one day a week.

Although the significance of the information obtained by this survey was not available in time for application to the class on which it was carried out, we have found by discussion with the students that they derived some benefit by keeping the records. The posting of the class averages each week enabled the individual to compare his figures with those of the class and encouraged him to make adjustments in his study habits if he was seriously out of line. Also just the fact that the student is keeping track of his study time makes him conscious of the need for proportioning his time and employing it to the best advantage. By having the printed

sheets available, the time required to keep the records is only a few minutes a day, and students have informed us they found it no great chore.

The survey has provided certain basic information on the study habits of first year pharmacy students. Although the figures were obtained at one institution it is probable that students are much the same everywhere and that the datum is applicable to other students in a similar academic category.

Role of Different Sciences in Pharmaceutics

M. L. SCHROFF

Calcutta, India

Pharmaceutics is a science as well as an art. It resembles more an applied science like medicine than a fundamental science such as physics or chemistry. As an art it is one of the oldest. The practice of the art of pharmacy had its origin in very early times when the various sciences had not been differentiated. Even today, while the science of pharmacy is an open secret and can be mastered by anyone who pursues it, the art of pharmacy is a closely guarded secret and those who are adept in it do not like to share it with others.

George Urdang, Director, American Institute of the History of Pharmacy, has defined pharmacy as the art and science of recognizing, identifying, collecting, selecting, preparing, safeguarding, testing, evaluating and dispensing all substances

* This paper by Prof. Schroff gives a comprehensive view of the trend of Pharmaceutical Education in India. That trend is of importance to Pharmaceutical Education in other parts of the world.—Ed.

of whatever kind and combination, used in preventive or in curative medicine. If we add to the above definition "the manufacture of drugs", we have a comprehensive definition of pharmaceutics, the study of which will require a knowledge of the fundamentals of the following sciences:—

- | | |
|-----------------|----------------------------|
| 1. Chemistry. | 6. Microbiology. |
| 2. Physics. | 7. Biochemistry. |
| 3. Mathematics. | 8. Pharmacology, including |
| 4. Botany. | Physiology. |
| 5. Zoology. | 9. Engineering. |

In our modern fight against disease and circumstances which are likely to be detrimental to health, chemicals and biologicals, as well as drugs of botanic and animal origin, are employed. Hence, a study of chemistry, microbiology and biochemistry, as well as botany and zoology, are of specific importance to students of pharmaceutics.

The role of chemistry in pharmaceutics is so apparent that it need not be discussed here in detail. Over and above a knowledge of inorganic and organic chemistry required due to a very large number of chemical substances and drugs of both inorganic and organic origin used in medicine, chemical methods of analysis have to be mastered with that degree of perfection which is not required to my knowledge for the study of any other science.

Standardization of drugs forms the very basis of modern medicine and slight mistakes in the analysis of a preparation may jeopardize not only the health but even the life of persons who take the preparation. Hence, a knowledge of analytical chemistry in its various aspects is of utmost importance. This brings us to the question of intimate acquaintance with the apparatus required for physico-chemistry measurements. Very few people realize that physical chemistry has the same role in pharmacy as the chemical symbols have in chemistry. No unit process of pharmaceutical engineering can be even understood without a basic knowledge of physical chemistry. To my mind, physical chemistry is the life-blood of pharmacy if the latter is to develop as a progressive living science.

Practically in each of the processes given under definition of pharmacy, physico-chemical principles play a leading role. Thus, in addition to a sound knowledge of both theoretical and practical organic and inorganic chemistry essential for the study of natural and synthetic inorganic and organic medicaments, a proficiency in the technique of analytical and physical chemistry, combined with a clear concept of the principles of theoretical chemistry, should form the foundation stone of the chemistry block of the future edifice of pharmacy.

Neither the study of physical chemistry, nor that of pharmaceutical engineering, nor that of the modern methods of delving into the secrets of biochemical processes taking place in the animal body or in the plants which are the manufacturing units of a large number of natural organic substances can be undertaken without a knowledge of physics. An editorial note in the *Chemist and Druggist* last year (early, 1947) on "Dispensing of Radioactive Drugs" ran as follows:

"Recent statements that nuclear physics has a vast application in medicine herald developments in the technique of pharmacy which at the moment have scarcely begun to take shape. The idea of handling radioactive substances is not new to pharmacists, as they receive now, for example, an occasional prescription for an active preparation of thorium. As nuclear therapy develops, it is probable that certain radioactive preparations will be supplied direct from a laboratory, like the thorium material, but, at the same time, there is likely to be an increasing need for radioactive preparations to be made up for the requirements of particular cases, such as an injection of radioactive sodium for giving a dose of *beta* and *gamma* rays throughout the body, or an injection of radioactive strontium for a bone tumour investigation. Although there may be conflicting claims, as there were with penicillin, as to who is best qualified to prepare these 'drugs' in a safe form for administration, the pharmacist, without doubt, is the natural choice, possessing, as he does, experience and knowledge of dispensing the formidable list of substances which pharmacopoeias now contain. How long radioactive isotopes will take in reaching regular use is not certain, but if the history of their introduction repeats that of penicillin, it is possible, that after a short period of clinical trial their use will suddenly be precipitated into almost every hospital ward.

Pharmacists should be prepared for this development, and institutional pharmacists particularly, together with retail pharmacists who wish to specialize in dispensing, would be wise to study the developments of nuclear physics in medicine as they occur."

In connection with the above, I wish to mention here that Radio-isotopes have now become available for foreign distribution by the United States of America Atomic Energy Commission. The list of such isotopes with an indication of their principle fields of use has been published in November 22, issue of the *Pharmaceutical Journal* and is given below:

"Antimony 122, 124, 125—Venereal and General parasitical diseases; argon 37—respiratory functions; arsenic 76, 77—action of insecticides, arsenic drugs and fumes; bromine 82—action of bromine drugs (including sedatives); Calcium 45—bone and teeth formation, rickets and bone diseases; carbon 14—cancer, photosynthesis, biological processes; Chlorine 36—Chlorine utilization by the human body; Cobalt 60—Cobalt utilization by animals, therapy requiring gamma radiation.

"Copper 64—Botanical studies; Gold 198, 199—blood diseases, specially leukaemia; idoine 131—therapy in thyroid disorders, including types of thyroid cancer; iron 55, 59—blood studies; mercury 197, 203, 205—action of mercuric drugs; phosphorus 32—polycythemia vera, chronic leukaemia, bone and teeth formation, fat and protein metabolism; potassium 42—disease of nervous system; silver 108, 110, 111—drugs containing silver, radio therapy; strontium 89—bone metabolism; sulfur 25—amino acids and proteins, action of penicillin and sulfur containing drugs; sodium 24—exchange of body fluids and blood flow, principally in connection with heart malfunctions; zinc 65, 69—studies of action of insulin."

Since physics and physical chemistry are regarded of not much import for students of pharmacy, I have dealt in a little greater detail with the importance of the study of physics and consequently of mathematics.

It is not necessary to describe here the obvious importance of botany and zoology to pharmacy. In India, where we have a rich storehouse of drugs of both vegetable and animal origin and which are employed in the indigenous as

well as in the western practice of medicine, the study of pharmacognosy which deals with geographical and botanical or zoological sources of crude drugs, their identification, whole or in powder, their constituents and the detection of their adulterants or substitutes, is obligatory. However, from the practical point of view, here should be a difference in the emphasis attached to the macroscopic and microscopic study of drugs. In India, powdered drugs are not marketed usually as is the case in the United Kingdom and elsewhere and hence the pharmacy students should be trained mainly in the methods of evaluation of powders, the detailed study of the same being left over for those specializing in pharmacognosy.

Microbiology has in recent times assumed much greater importance than it used to have in the pre-war days. Vaccines and sera are gradually giving place to anti-biotics which are the talk of today, not only among the medical people but also among the people in general. The manufacture of vaccines and sera has in the past been done predominantly by the medical people, but the manufacture of penicillin and streptomycin is to a by far greater extent a problem of chemical, pharmaceutical or microbiological engineering (by whatever name one may call it), the moment the preliminary microbiological work is finished. On the other hand, the dispensing of anti-biotics requires a knowledge of the fundamental principles and techniques of microbiology. Further, the sterility tests, preparation of media and cultures, vaccines and sera or other injectables also belong to the domain of microbiology.

Biochemistry also does not require detailed consideration here as it is accepted by all to be a major interest of study for pharmacists. Vitamins, hormones, enzymes and various biochemical processes, as well as the bio-assays, lie predominantly in the domain of biochemistry. Further, the recent biochemical investigations requiring radio-isotopes are unfolding vast fields for biochemical research.

Pharmacology and physiology are of as fundamental an importance as any other basic science for the proper under-

standing of the action of drugs, their uses and their evaluation. I would leave its consideration in the hands of our pharmacologists who can enlarge upon this aspect better than myself.

That knowledge of engineering is essential for the manufacture of drugs goes without saying. How much engineering is to be learned by a student of pharmacy is a matter to be decided depending on the preliminary training of the student and the time available for this study. For students of pharmacy, understanding of thermodynamic principles is important as they have to deal with problems of heat transfer to a much greater extent than students of any other branch of manufacture.

Finally, all the above studies will be of no avail if we do not apply the "science of true living" in our every day life. Professor Arthur H. Compton has rightly said:

"Our re-orientation must be towards considering first what we can do to make ourselves necessary to the welfare of our fellows. 'The greatest among you shall be the servant of all' is no longer merely a guide to the life of happiness. In the atomic age, it expresses the condition of survival."

NEW IN THE FAMILY

Rosalie Jean Sprowls.—Born February 29, 1948, daughter of Dr. and Mrs. J. B. Sprowls, University of Buffalo.

Anne LeSourd Bradley.—Born March 24, 1948, daughter of Mr. and Mrs. Willis T. Bradley, Massachusetts College of Pharmacy.

James Madison Dille, Jr.—Born March 29, 1948, son of Dr. and Mrs. James Madison Dille, University of Washington.

Mardys Cecilia Ulan.—Born May 10, 1948, daughter of Prof. and Mrs. Martin S. Ulan, Rutgers University College of Pharmacy.

Celestine Ann Kleber.—Born September 29, 1947, daughter of graduate student and Mrs. John Kleber, University of Minnesota.

Susan Barbara Schermerhorn.—Born March 28, 1948, daughter of graduate fellow and Mrs. John Schermerhorn, University of Minnesota.

Cynthia Joy Call.—Born June 9, 1948, third daughter of Prof. and Mrs. Tracy Call, University of Wyoming.

Pharmacognosy in the Past, Present and Future

G. EDMAN¹

The Royal Pharmaceutical Institute
Stockholm, Sweden

The knowledge about drugs² is old, just as old as the human race; but as a separate teaching subject, under the name of pharmacognosy, it is of relatively recent date.

Dealing in medicines became divided between two occupations, that of the apothecary and of the physician, as early as the first millenium of our chronology and apothecary shops became widely established during the Middle Ages. In spite of this, it was not until the nineteenth century that pharmacists obtained their own college education. Until then, an individual who desired to become a pharmacist, if he desired a more thorough education than could be had at the various apothecary shops, was compelled to follow a not strictly pharmaceutical curriculum at accessible chairs, and these were mostly medical.³ However, during the first part of the 19th century special pharmaceutical colleges were erected, either through private initiative or through respective medical boards or in care of druggists' associations, either as independent institutions or as a part of a university. Of special interest to us is that type of such institutions in which the teaching of fundamental subjects was intended for pharmacists only. Our pharmaceutical institute belongs to this category.⁴

¹ Rector, professor of botany and pharmacognosy of the Royal Pharmaceutical Institute, Stockholm 6, Sweden. Translated from an article in the monograph: *The Pharmaceutical Institute's Student Society, 1896-1946*, by Harald G. O. Holck, College of Pharmacy, University of Nebraska, Lincoln.

² In this translation the word "drugs" designates pharmacognostic drugs, not medicines or remedies in general.

³ For example, in Upsala the subject of medicinal remedies was given under the name of *Media pharmaceutica* as early as 1655. In 1742 it was, however, split into *materia medica* and *chemica pharmaceutica* which were divided between two chairs. *Materia medica* was transferred to the professorate of *medicinae et botanicae*, especially established for Linneus. In the 1788 division the latter professorate came to include only *materia medica* and natural history. In 1878 a professorate in pharmacology was established and in 1893 this was changed into a professorate in general and special pharmacodynamics and pharmacognosy (this pharmacognosy naturally is the small measure of pharmacognosy needed by a medical man).

⁴ Our pharmaceutical institute dates back to the year 1837, but up to the year 1865 the appropriate teachers of the Karolinska Institutet had to examine the students of pharmacy.

The pharmaceutical part of the teaching of medicine,⁵ *pharmacy*, which is that part of that subject which deals with procuring of medicines, is indeed a connected whole, but the teaching of it must be divided into separate subjects, because they represent different aspects of the procuring of medicines and because they constitute heterogenous combinations of the fundamental sciences. These subjects are three: namely, *pharmacognosy*, *chemical pharmacy* and *technical pharmacy*. A simple differentiation of pharmacy is the arrangement of the following definitions of the three special subjects:

Pharmacognosy deals with those crude products from the organic world from which medicinal remedies are prepared; *chemical pharmacy* deals with those raw materials of inorganic nature and those chemical substances from which medicines are produced; and *technical pharmacy* deals with the preparation of medicines from the aforementioned starting materials.

These special subjects in certain aspects are so intermingled that the mentioned borderlines do not hold in their entirety. This first of all depends on the fact that they have certain essential accessory sciences in common, and for didactic purposes it is therefore suitable that in the teaching of a given subject, attention be given to certain relations, which according to the above given definitions really belong to some of the others. Thus chemical pharmacy includes, or ought to include, even the chemical evaluation of drugs, which belongs to pharmacognosy, and to include the various forms of

⁵ For all of the teaching concerning medicines Dale, at the close of the 1600's, coined the term *pharmacology* with the definition: *Pharmacologia est descriptio rerum medicamentarium ad bene medicandum*. However, because this term did not get into general use but that instead the term *materia medica* was used, Gren at the end of the 1700's found himself called upon to emphasize: "Die Lehre von der Kenntniss der Arzneymittel nenne ich *Pharmacologie*. Die Etymologie des Wortes rechtfertigt meine Benennung. Weniger schicklich belegt man sie mit dem Namen *Materia medica*, der eher eine Sammlung von Arzneymitteln, also die Lehre von denselben bezeichnet." ("The teaching of the knowledge of medicinal remedies I shall call *pharmacology*. The etymology of this word justifies this choice. Less suitably one tries to cover this by the name *Materia medica*, which rather designates a collection of medicinal remedies than the teaching concerning the same.") Thereafter we have to a great extent employed the term *pharmacology* as the term for all of the teaching concerning medicines, but it has also been used with other meanings (see Edman: What is Pharmacology? Svensk Farmaceutisk Tidskrift, 1942). In relation to both occupations, that of the physician and that of the pharmacist, the subject of medical remedies consists of a pharmacodynamic and a pharmaceutical division.

medicines, which belong under the technical pharmacy. We also find a transgression of the given borders and a penetration into the domains of technical pharmacy when pharmacognosy concerns itself with the microscopical analysis of plant powders and parts of plants in other more or less finished forms of medicaments. Moreover, pharmacognosy readily concerns itself with reactions and chemical analyses for the evaluation of which a microscope is essential, as well as accounting for certain biochemical and physiological problems, which really belong in the chemical or technical pharmacy.

With the term *pharmacognosy* we here therefore understand it to be the peculiar complex of sciences and adaptations of such, which must be communicated to the students of pharmacy, so that they may secure at one time a picture of the raw products from the world of plants and animals, formerly also from the realm of minerals (to be discussed later) which are employed in the manufacture of medicines, and eventually various biological questions concerned with securing of medicines in general.

This dominant biological concept of the subject pharmacognosy, greater now than when the word *pharmacognosy* was coined, seems to me is an essential reason to change the name of this subject to *biological pharmacy*. Moreover, against the term *pharmacognosy* one may note that this word is relatively indifferent and in no way points out the peculiarities of the subject. The term *biological pharmacy*, on the other hand, would furnish a suitable pendant to the terms *chemical pharmacy* and *technical pharmacy*.

It is self-evident that changes in demands for medicines have occurred as time has passed which have affected the teaching of pharmacognosy, and moreover, these changes have been of a very special nature, particularly those occurring during recent times. These changes concern the number of natural products, which the pharmacist must consider, and the details concerning the natural products now demanded about which he must secure information.

THE NUMBER OF DRUGS. Today the number of natural products which belongs to pharmacognosy is relatively small compared with what it formerly was.

During many centuries it was only natural products, drugs from the kingdom of plants, animals and minerals which were available to the appropriate professionals, the apothecaries and their predecessors (i. e., "medicine men" of the olden times and monks of the mediaeval times), when through relatively simple manipulations they prepared their forms of medicines (powders, decoctions, electuaries, extracts, tinctures, pills, salves, etc.), and it is no small number of natural products which throughout the ages have been found to possess or have been credited with alleviating or curing effects in disease. Greatest is the number of plants or parts of plants (vegetable "organ drugs", such as herbs, roots, leaves, fruits, etc.) and products made from plants (vegetable galenical emenda⁶, such as resins, volatile oils, fats, etc.). It is not less than 12,700 such drug plants that Dragendorff was able to compile in his "Heilpflanzen der verschiedenen Völker und number of more or less peculiar animals were ascribed significance in the preparation of medicines, and from the mineral kingdom one likewise secured quite a few articles (among others a large number of precious stones were employed in preparing "costly" medicines).

Certainly even in regard to the use of drugs, as well as in regard to many other incidents, a "panta rei" governs. Old drugs have been replaced by newer ones and these have again been replaced by still newer ones, but in many cases even old drugs, which had been forgotten or given up, have anew come into prominence. But one dare say that the use of drugs during a long period of time showed increasing progress. To

⁶ By the term *galenical emenda* the author means the pharmacognostic drugs (fats, resins, balsams, volatile oils, crude extract of licorice, etc.) which are secured by manipulations (tapping, expression, melting, distillation, extraction, etc.) similar to those used in the apothecary for making *galenical preparations* (adeps suillus, aqua amygd. amar., resina jalapae, extracts, etc.). *Emenda* (from *emere*=buy) indicates that the drugs in question can be bought for the domestic use and preparations may be prepared from them at home (Translator's comment).

the ones inherited from the "ancients" (Egyptians, Babylonians, Jews, Greeks and Romans) have been added those which became known in Europe through the Arabians and after the great geographical discoveries, for example, the discovery of the sea-routes to the East Indies and to America, until in the 17th and 18th centuries the European drug treasure—the vegetable (the animal one had started to diminish strongly long beforehand)—reached its culmination through the taking into use additional native drug plants. Concerning the number of drugs, which during the first centuries of the new era found "grace" for the "critical competence" and were found or ought to be found in the apothecary shop, one gets a certain comprehension through Table I, which is a compilation (according to Falck, *Die Arzneibücher*, 1920, pp. 82 and 108) of the drugs which were included in the better known pharmacopeias of those times. In addition, we naturally also find a large number of drugs which were used in folk medicine.

Table I

Pharmacopeia	Year	Number of drugs from the			Total	
		Plant kingdom	Animal kingdom	Mineral kingdom	Simple	Compound
Cordus						
(Norimberga)	1554?	695	62	67	824	989
Augustana	1564?	682	94	95	871	940
Amstelredamensis	1636				459	218
Ultrajectina	1664				417	217
Londinensis	1680				1031	468
Wirtenbergica	1741	633	127	109	869	1083
Helvetica	1771				721	1389
Suecica	1775	ca 390	ca 25	ca 40	ca 455	ca 400

During the 19th century there occurred a considerable and noteworthy regression in regard to the number of drugs in the pharmacy, and even though in later years many vegetable and animal drugs were rediscovered or again taken into use and shown to be of the very greatest significance for pharmacology (f. ex., vitamin- and hormone-drugs), we do find that the number of drugs, which according to pharmacody-

namics are regarded as worthy enough to be required in the apothecary shop, is considerably less than it was when this drug number was at its highest. This is very plainly shown by the Swedish pharmacopeia, the first edition of which (1775) contained about 390 plant drugs (see Table I), in its 10th edition retaining only 144 (of which 53 were galenical emenda). Because of its reverse trend the Swiss Pharmacopeia of 1934, which included about 250 drugs, has been characterized in some quarters as "a pharmacopeia for women versed in the empirical uses of drugs."

The causes for this change in the pharmacological views and the noteworthy reduction in the number of necessary apothecary drugs which is connected with this lie in the unprecedented progress in chemical pharmacy during the past century and the circumstances, that to a greater and greater extent we have come to employ chemical substances in place of drugs in the preparation of medicines, as well as that the pharmacies were able to secure these from chemical manufacturers. We had learned to isolate the active principles from drugs, and furthermore, to determine their constitution and to accomplish their synthesis. By these means and because we succeeded in producing substances which not only in regard to dosage, but also in other therapeutic regards, were considered more advantageous than the corresponding drugs, the latter naturally became superfluous. However, to this we may remark, that the chemical factories in question, the "*pharmaceutical manufacturers*", often, perhaps most frequently, were developed from laboratories of the pharmacies.

Pharmacognosy has, however, also lost drugs owing to the fact that drugs from the mineral kingdom have been transferred into chemical pharmacy. Still Martius, who was active during the first half of the 19th century,⁷ defined pharmacog-

⁷ The term *pharmacognosy* was used in the literature for the first time, as far as I know, in 1815 in the title of a small publication by Seydler entitled "*Analecta pharmacognostica*." However, the term *pharmacognosy* seems to have become best known through Martius, apothecary and professor of pharmacy and pharmacognosy at Erlangen, in that he employed it in his lectures (from 1825) and in 1832 published "*Grundriss der Pharmacognosie des Pflanzenreiches zum Gebrauch bei akademischen Vorlesungen, so wie für Aertze, Apotheker und Drogisten entworfen*"

nosy as "*ein Teil der allgemeinen Warenkunde*" and "*wir begreifen darunter die Lehre, die aus den drei Reichen der Natur bezogenen Heilstoffe, in Betriff ihrer Abstammung and Güte zu untersuchen, sie auf Reinheit zu prüfen, sowie Verwechslungen oder Verfälschungen zu ermitteln.*" Since then we have excluded the mineral drugs from this definition. Tschirch (*Handbuch der Pharmacognosie*, 1909, p. 6, and 1930, p. 7) understands by pharmacognosy "*die Wissenschaft, deren Aufgabe es ist, die Drogen pflanzlichen and tierischen Ursprungs nach allen Richtungen hin—mit Ausnahme der physiologischen Wirkung—wissenschaftlich kennen zu lernen, korrekt zu beschreiben und unter allgemeinen Gesichtspunkten miteinander zu verknüpfen.*" One should here note the expression "With the exception of their physiological action" (see further discussion). Furthermore, the mineral drugs employed in the pharmacies are really very few.

In the discussion about the decrease in number of drugs in the pharmacies one may with rather great probability put up these questions: Is there reason to believe that the reduction in the number of drugs will continue until the drugs shall have vanished completely from the pharmacies, and subsequently the practitioners shall completely cease to employ drugs, and that even folk medicine after a longer or shorter interval of time thereafter shall completely transfer to the taking of tablets? Or do we find anything which indicates that drugs, at least to a certain extent, shall persist? It seems suitable first to say a few words concerning the latter.

There are many pharmacologists who advocate that the use of drugs is proceeding toward a renaissance—among others, Tschirch, who in 1909 gave a lecture which dealt with "The Future of Pharmacognosy" and which concluded with the appeal "Return to Drugs." In regard to this appeal, he

* We consider this subject to include medicines derived from the three natural kingdoms: investigations regarding their sources and qualities; methods of testing for purity; the avoidance of errors in identity; and adulterations.

° The science, whose task it is to furnish scientific knowledge concerning drugs of plant and animal origin in all aspects—with the exception of the physiological action—describe them correctly and relate them to one another under topics.

says (1930, p. 37): "*Der Ruf ist verstanden worden und hat in dem in den letzten 20 Jahren stark vermehrten Interesse an der Arzneipflanzen-Kultur und—Einsammlung seinen Niederschlag gefunden. Die Drogenhäuser berichten mir, dass der Drogenabsatz gestiegen sei. Auch die Pharmakopöen haben ihren Drogenbestand trotz der Tabletten—und Ampullenmedizin nicht herabgesetzt, z. T. sogar erhöht.*"¹⁰ As an example of the last mentioned proposition he points out how Schwabe's homeopathic pharmacopoeia in its second edition (1929) "*noch eine grosse Menge neuer Arzneipflanzen und Drogen aufgenommen und nur wenige gestrichen hat.*"¹¹ The 1st edition of this pharmacopoeia included about 660 drugs, which in the second was altered with about 200 additions and 35 deletions. Concerning the mentioning of this pharmacopoeia I will, as my opinion, state that the apothecary, irrespective of his position to the question, in his profession ought to be neutral in the discussion concerning the justification for homeopathy.

Many pharmacologists have also believed themselves able to point out the reason that one in certain cases should or ought to prefer a drug instead of its active main constituent. Even if the analysis of these views lie somewhat outside this survey, I shall briefly sketch some of them as they may be said to furnish a desirable continuation of the above made naming of the causes of the regression of the number of drugs.

1. An essential reason that the faith in drugs was shaken and that one instead began using chemical substances was that the strength of drugs can vary considerably and that the dosing of them therefore to a large extent was uncertain; at times drugs were too weak, at others much too strong. On the other hand, the medicines which were made from well-defined chemical compounds could be controlled and the doses be exact. Because now many drugs can be assayed, even the remedies which are made from them can be prescribed with the exactness necessary in practical use. Furthermore, it should

¹⁰ "The demand is understandable and has during the past 20 years found its manifestation in a strongly increased interest in the cultivation of medicinal plants and their collection. The drug-houses tell me that the sale of drugs has increased. Moreover, in spite of tablet and ampul preparations the pharmacopoeias have not decreased the number of drugs recognized, occasionally even increased them."

¹¹ "Has included still a large number of new medicinal plants and drugs and has deleted but few."

not meet with insurmountable difficulties to develop methods of assay even for those drugs for which we lack these and which for one or some of the to be mentioned reasons may be considered worthy of consideration by pharmacology.

2. It would seem that pharmacodynamics should give the drugs greater recognition now than formerly when one considered a drug mainly as an impure form of the essential constituents. As an example, opium was considered as impure morphine and cinchona bark as impure quinine. This way of looking at it is understandable, because both biochemistry and pharmacodynamics were then but slightly developed. It is, of course, simplest to decipher the effect of single substances; the interpretation naturally becomes the more difficult the more complex a medicine is. And the drugs in general do represent highly complex medicines! Moreover, it has been found that consideration must be given to the harmony, synergisms and antagonisms, among the individual components in a mixture. An example of this is that the pharmacodynamic effect of opium, whose main alkaloid is morphine, in some respects is supported, in others counteracted by minor alkaloids. One may now appreciate better that the active substance may have a more advantageous nature in the drug than when it has been isolated from the same. Of this the general digitalis glycosides furnish an illustrative example. These have been more complicated than was formerly believed even up to about 1930. See also reasons 3 and 4.

3. It has in many cases been shown that for a certain purpose one got better results and perhaps fewer or no undesirable side actions, if, instead of a certain main constituent of a drug, one used also other substances from the same drug in the proportions which approximately correspond to the proportions of these substances in the drug in question. This has been considered when "total preparations" of many investigated drugs have been prepared; i. e., opium, cinchona bark, digitalis leaves and ergot. These drugs are among the most important in our drug treasury. It is thus not excluded that also other drugs, if only they were subjected to a similarly intensive phytochemical and pharmacodynamical investigation as the ones mentioned, might show themselves entitled to a noteworthy position in our drug treasury.

4. Many manufacturers of pure preparations have gloried in having removed the "balast substances." We might ask ourselves the question: which of the constituents of a drug are to be considered balast substances?

a. If we by the term "balast substances" mean those pharmacodynamically indifferent substances such as carbohydrates, fats and

proteins, then we are dealing with substances which are essential in our food. If the preparation is intended only for oral medication, then it would appear that the worker upon preparing it pure has done much labor in vain. Moreover, it is not at all impossible that the supposed "indifferent" substances are not without significance. The history of the tannic acid drugs shows this. When we succeeded in isolating tannic acid from the tannin containing drugs, it was expected that this would get wide therapeutic use. It was found useful for much, but we find it unsuited for certain peroral use, and for this purpose we combined it with albumen (in tannalbin). However, it is just such a tannic acid-albumen combination which exists in the tannin drugs and which has been formed by the drying of the drug.

b. Should one reckon to the balast substances also a part of the pharmacodynamically inactive substances, then there is a still greater possibility than in the just mentioned tannic acid example, that they in some manner may alter the action of the especially designated active substances or substance complex. This is the case with saponin-free digitalis preparations. It has been reported that the digitalis saponin, digitonin, may strengthen digitoxin action up to 50 fold.

5. It is not only the therapeutic factors which act decisively in the question "drug or chemical substance", but also the economical. Of course, a not essentially higher therapeutic value or the possibility of a somewhat more exact dosage—the advantages of which perhaps may be procured if in a case of a certain disease a chemical substance were used instead of a drug—should not be bought at too high a price. The economical factors have certainly in many cases acted to the advantage of a drug.

Thus the answer to the other question is that we shall continue after the present and well into the future to employ drugs within pharmacology. The answer to the first question, if we have reason to suppose that drugs should completely disappear from the pharmacy, follows as a corollary to the answer to the first one.

The number of drugs has diminished, which perhaps may seem strange, but *knowledge about the respective components* has, as is natural, increased.

It is understandable that for a very long time the curriculum on drugs only could include the history of the drugs,

ethnology, provenience, preparing and commerce, as well as the etymology of drug names, and that during the times only macromorphology was available for identification and evaluation. Likewise, many pharmacy students could not avoid securing knowledge of the effects of the drugs, because the teachers were often physicians (physician-botanists, physician-chemists, physician-pharmacists)² and also frequently teaching was carried out simultaneously with medical students. The purely pharmaceutical teaching, given in other places than the apothecary shops, was very sporadic and very imperfect.

A new epoch was entered during the 19th century when pharmacognosy became separated from medicine (particularly by the work of Guibourt), even though then physician-botanists were used as teachers to a great extent.⁴ Pharmacognosy now became an independent pharmaceutical discipline and secured thus its real position. It started to take into its service parts of botany (and zoology) other than macromorphology and systematics. The use of magnifying glasses and the microscope created new possibilities (Schleiden's demonstration of the anatomical difference among various *Sarsaparilla* types in 1847 has become classical) and at present the micromorphology of a drug is at least of as great value for the pharmacognocist as its macromorphology. If we further consider that many of the conquests in physiology (including genetics) cleared up many problems concerning the preparations of drugs and their preservation and also the cultivation improvement of drug plants, then it is evident that the pharmacognocist today must be thoroughly familiar with all branches of biology.

In regard to chemistry, this discipline had for a long time little or no significance for pharmacognosy, but when about in the 19th century, we learned to know the chemical constituents of organisms and laid clear the chemical relations within biology, even chemistry became a more and more important accessory science to pharmacognosy, and in that century's second half it became (particularly through the efforts of Flücki-

ger) as important as botany. However, one can not say that pharmacognosy and chemical pharmacy compete with each other concerning the chemical nature of drugs. Of course, even chemical pharmacy had to be interested in the chemistry of drugs, but its occupation with this is essentially different from that of pharmacognosy. The chemical pharmacy treats the chemical nature of a constituent, its manner of reaction, synthesis as well as qualitative and quantitative determination, whereas pharmacognosy works with the biological and biochemical relations of the constituent (formation within the organism and role in its metabolism, relations dealing with preparation and storing of drugs, as well as with culture of drug plants and experimentally improving them, and also their pharmacodynamical significance). Moreover, it has become suitable on account of the lately increased employment of biological medicines together with simultaneous increase also of non-biologicals, that certain, in especially high degree biologically emphasized chapters of chemistry, i.e., about vitamins, hormones, and antibiotics, become relegated to the teaching of pharmacognosy.

That the special branch of pharmacy called pharmacognosy makes use of the other pharmaceutical special branches (aside from various non-pharmaceutical accessory sciences) in order to accomplish its goal it is hardly necessary to mention. On the other hand, it seems to me that we would not confuse the pharmaceutical character of pharmacognosy (as well as none of the other pharmaceutical special subjects) and make it to an unsuitable degree medical, were we to use even pharmacodynamics as an accessory science. That is to include in pharmacognosy certain information about the pharmacodynamic action of drugs. In many places this is considered not only unsuitable but even incorrect. Tschirch's definition of pharmacognosy (see above) may perhaps be interpreted in that direction. According to him pharmacognosy shall describe plant and animal drugs "In all directions—with the exception of the physiological action." This passage evidently is not an expression to indicate that Tschirch considers that everything

belonging to pharmacodynamics must be banished from pharmacognosy, because his handbook, both in its first (1909-1927) and in its second (1930) editions, includes with many drug monographs also a section on usage. These divisions, however, are rather meager as regards pharmacodynamics and essentially take up only the therapeutic use of the drugs concerned. Possibly by his definition he therefore means that even within pharmacognosy one may certainly tolerate certain therapeutic information, but that it is not suitable for scientific pharmacognosy to concern itself with pharmacodynamic work. However, he says concerning the accessory sciences, history, and linguistics, sciences belonging to his "all directions": "*Sehr schwierige Gebiete sind Geschichte und Linguistik der Drogen, z.B. die Etymologie der Namen. Um sie als Forscher treiben zu können, muss man ausser Pharmakognost (und Botaniker) auch geschulter Historiker und Sprachforscher sein.*" Concerning the possibilities for such a combination, and through this, productive work in these fields within pharmacognosy, he further states, "*Das dürfte sich selten zusammenfinden, und so gibt es denn auf diesem Gebiete die meisten Irrtümer (denn auch ein Historiker und Linguist, der nicht auch Pharmakognost ist, irrt oft auf diesem Boden) und das meiste ist noch zu tun. Merkwürdig ist es, dass jeder Pharmakognost, fast ohne es zu wollen, ganz unwillkürlich zu historischen Studien geführt wird. Kein Gebiet ladet ja so sehr dazu ein wie gerade das uralte der Heilpflanzen und Drogen.*"¹² However, to me it seems that a teacher in pharmacognosy rather ought to feel himself more drawn towards the biological than to the humanistic within pharmacognosy and just as he, who has to be a trained botanist and in a wide measure a chemist and physiologist, should have greater prospects by next to his morphological and or chemical investigation to become an acceptable

¹² "History and linguistics of drugs are very difficult fields, e. g., the etymology of their names: in order to be an investigator here one must not only be a pharmacognocist (and botanist) but also be a trained historian and linguist."

¹³ "This one may rarely find together, and therefore we find in these fields the most errors (also because a historian and linguist, who is not also a pharmacognocist, often errs in these fields), and much is yet to be done. Strange it seems, that every pharmacognocist, though he may hardly have wished for this, is led quite involuntarily to historical studies. No field is more conducive to this than our ancient one of medicinal plants and drugs."

pharmacodynamist. Tschirch means perhaps with the words in his definition and his expression concerning history and linguistics, that in case of drug names and drug history rarely anyone but a pharmacognocist shows interest, whereas in case of drug action we have a separate science, pharmacodynamics, which deals with all drugs. Were it only so!

The one who first introduced pharmacodynamic science into the pharmacognostic teaching seems to have been Wasicky, and several pharmacognocists have followed his example. Thus it has happened with us.

The reasons why I consider also that the future pharmacognocist should not be completely ignorant of the pharmacodynamic action of drugs and that therefore pharmacodynamics in a suitable degree ought to go into the teaching of pharmacognosy are:

1. During the most recent decennials, medicines have to an ever increasing extent become the objects of biological evaluation. The pharmacist ought to possess information of what is behind the reactions used for these evaluations, i. e., he ought to become acquainted with a good deal of pharmacodynamic actions.
2. During the lectures covering the drug systems I make use of a classification solely based on therapeutic reasons. The matter of classification naturally is open to discussion. The pharmaceutically most correct one would perhaps be a drug system according to chemical reasons, but to carry through a chemical system exclusively is hardly possible. Even Tschirch, perhaps the foremost representative for the use of chemical systems, has in this system been forced to give certain groups therapeutic emphasis. It is quite natural to give a certain pharmacodynamic background for the therapeutic groups.
3. The pharmacist many times understands more easily the reasoning of the physician if he is not completely lacking in pharmacodynamical training.
4. On the other hand, I shall not take part in the discussion to what extent a pharmacist ought to employ information in pharmacodynamics and therapy in his profession as it pertains to the laity. However, I believe that the pharmacist becomes more critical and, to his advantage, reluctant to give "medical" advice "over the counter" if he has a certain amount of insight into the complicated possibilities of actions of medicines.

It is said that teaching of pharmacognosy ought to be reduced because it, by now, has lost much of its significance, inasmuch as the use of drugs has diminished very considerably. Of course, here it is the number of drugs that has been considered. Concerning this, that it naturally should mean a possibility for shortening the studies in pharmacognosy were one to measure the need for knowledge in this subject solely according to the number of drug monographs. However, because the general points of view only to a slight extent are directed according to this number—at least the named points of view have been added, one may dare to say that pharmacognosy, as it has been sketched here, hardly can be given a lesser space in the curriculum than now. Rather the opposite. This is illustrated by the fact that it has been discussed at our institute to have the subjects biochemistry and pharmacodynamics taught by separate teachers. However, in regard to this I would like to say:

I will be the first one to agree that it would be a very good thing if the pharmacy student could receive the necessary guidance in biochemistry and pharmacodynamics by specialists under the condition, however, that these subjects can be arranged within the curriculum as fundamental subjects, i. e. spaced in time after the two mutually fundamental sciences, chemistry and physiology, but before the pharmaceutical disciplines they are intended to support. That they thus precede pharmacognosy would not be of any significance because they could in no cases build on pharmacognosy. However, in our case there is a certain danger in creating more fundamental subjects than are absolutely necessary. The authorities in question may then come to the view that the fundamental teaching, if it was considered to be split up among many persons, could be made more economical, were it turned over to a university or a general college. If this should occur, then to a certain extent we would return to the condition that a pharmacy student would receive the same fundamental teaching as those entering other fields and thereby perhaps receive considerable superfluous material. It would

seem a happier solution if we could avoid such a high degree of differentiation, if such an avoidance could be had without detriment to the teaching in general, and turn over the fundamental relations in question to teachers oriented pharmaceutically. As to the topics biochemistry and pharmacodynamics, it would seem that in this case it would be most convenient if these be taught by the teacher in pharmacognosy. This person, who in addition to pharmaceutical training should be schooled in botany and physiology as well as be well versed in chemical, especially biochemical problems, ought not to have any difficulty in becoming acquainted with the "mysteries" concerning the biochemical and pharmacodynamical relations which may be demanded for the pharmaceutical teaching.

In conclusion a few questions regarding the future! Will the justification for the existence of pharmacognosy completely cease, and will chemical pharmacy, possibly in combination with biochemical pharmacy, remain the only pharmaceutical discipline which deals with the supply of raw materials for the pharmacist, after pharmacognosy possibly for a longer or shorter period of time vegetated on the "drugs" which may have come to play a role in folk medicine until replaced even here by tablets containing synthetics? And will the future pharmacy student meet with pharmacognosy only in the history of pharmacy? It would seem that there is no reason for a pharmacognocist to entertain such gloomy thoughts about the future, because the probability would seem to be that pharmacology will always require drugs.

However, should it come to pass in the distant future that drugs would completely get out of use in the pharmacy, then we most likely shall find other fields of activity for pharmacognosy than to describe drugs, because among the pharmaceutical disciplines which with great probability will be demanded will be a *biological pharmacy*.

Pharmacy in Peace and War

Address Given by Major General R. W. Bliss,
The Surgeon General, U. S. Army, to the
American Pharmaceutical Association Conference,

6 May, 1948, Washington, D. C.

Dr. Fischelis, in his invitational letter to me, indicated that the primary subject for discussion would be the War time services of the Pharmacist. I assumed that he intended that a meeting such as this would be an occasion for an exchange of views on manpower needs among the various government services and the branches of civilian pharmacy represented here today, in the event of an expansion of the Armed Services. The leaders in the profession of Pharmacy are to be commended for making it possible for such a meeting as this.

The headlines give repeated indication that we are living through a period of real crisis. As far as the Medical Department is concerned, it is perhaps fair to state that a real crisis constantly exists. There is much in common between medicine and war. The entire medical fraternity is engaged in a ceaseless battle against disease. I feel that it is our duty as citizens of the United States to insure that everything that can be done is done so that we, as a nation, may remain strong in that vital cornerstone of national security, health.

As The Surgeon General of the Army, I am responsible to the Chief of Staff for the health of the Army. Fulfilling that mission, in peace or war, requires qualified personnel, medical as well as non-medical. Graduate pharmacists, by virtue of their past training, are among the most adaptable for the auxiliary medical services.

We have all witnessed the successful conclusion of the most destructive and costly war in the history of mankind.

The members of the profession of pharmacy answered the call to arms and in no small measure aided in the final victory.

Pharmacists served in all branches of the Army during the late war. We are especially proud of those who served in the Medical Department as enlisted men, as well as those who served as officers upon completion of our Medical Administrative Corps Officer Candidate School. One cannot presume that future wars can be fought with the weapons of the past war. Nor is it feasible to consider the pattern of operations that previously proved successful as the mold for any future emergency. The same holds true for utilization of personnel of the Medical Department.

It was our experience in the late war that the Medical Department could well utilize the skills of many personnel other than doctors of medicine and dentistry. Some of those skills are in chemistry, serology, parasitology, psychology, entomology, sanitary engineering, optometry, business management and law as well as pharmacy. The necessity for a team and for team play was evident. The lessons gained during the war demonstrated a need for a Corps within the Medical Department of the Regular Army as well as the Organized Reserves that would embrace the entire range of those skills. You are all familiar with the formation of the Medical Service Corps and the part organized pharmacy played in aiding passage of Public Law 337 which created the Corps.

I should like to take this opportunity to give you a brief report of the status of the Corps generally and more specifically as it pertains to the graduate pharmacist.

The Corps is divided into four sections as follows: The Pharmacy, Administrative and Supply Section, the Optometry Section, The Sanitary Engineering Section and the Medical Allied Sciences Section.

The Regular Army component is authorized a strength of 1022 officers, 60 per cent is allocated to the Pharmacy, Admin-

istrative and Supply Section. During the Integration program it was necessary to transfer a considerable number of officers who were previously commissioned in the Medical Administrative Corps, the Sanitary Corps, and the Pharmacy Corps to the newly-created Medical Service Corps. We reviewed, literally, thousands of applications from wartime officers for integration into the Regular Army Medical Service Corps. The bulk of these applications were from officers who were qualified in one way or another, for duty with the Pharmacy, Administrative and Supply Section, with the consequence that we are currently slightly over strength in that section. This overage has made it necessary to temporarily suspend the acceptance of applications for commissions in the Regular Army Medical Service Corps for subsequent assignment to the Pharmacy, Administration and Supply Section. The net result of transfers to, and new commissions in, the Regular Army Medical Service Corps for subsequent assignment to the Pharmacy Administration and Supply Section. The net result of transfers to, and new commissions in, the Regular Army component has yielded us 75 graduate pharmacists. The officers are currently rendering commendable service. They are serving as officers in charge of pharmacies in our general hospitals, in the field of medical supply including procurement, storage and distribution of drugs, in the many phases of Medical Administration such as hospital adjutants, registrars, mess officers, hospital detachment commanders. They are serving also as administrative assistants to staff surgeons in staff duties in the various divisions of my office as well as in the office of The Air Surgeon and as instructors at the Medical Field Service School. Some of them are detailed to the General Staff Corps, one is currently attending the Industrial College, another is completing graduate training at N.Y.U. in Business Administration, while yet another is located in Helsinki, Finland, as an Assistant Military Attache. Several have earned their masters degrees at Northwestern University in Hospital Administration and all of them have attended one or more service schools.

In speaking of Medical Department personnel, I cannot refrain from noting the existing shortage of physicians in the service and the apparent excess in demand over supply in civilian life. You, no doubt, are thoroughly acquainted with the civilian situation through your daily contacts with the medical profession. It is my earnest desire that the Medical Service of the Army lead in maintaining the highest standards of contemporary medicine. In order to achieve that end, it is necessary to insure that our Medical Officers receive as much professional training as is required to qualify them for all the specialized fields in the practice of total medicine. This will insure the highest level of medical service provided that it is made possible for them to confine their work to the varied preventive, research, clinical and management duties in which they are especially qualified.

In order to relieve the medical officer of as many non-professional duties as is feasible, I have directed that a survey be made of all duties being performed by medical officers. This survey is to be a continuous responsibility of my staff to determine which administrative duties must be performed by a medical officer, which are desirable that he perform, and which it is wasteful for him to perform. I feel confident that many things now being done by medical officers will become the responsibility of Medical Service Corps officers, and I am certain that they will be well done.

I am interested, in no less degree, that the Medical Department of the Army develop a Pharmaceutical Service, which will be outstanding in all respects and to which the members of your profession may point with pride. Progress has been slow but sure. Positive actions have been completed and many more are contemplated. I am fully cognizant of the modern physician's medical armamentarium, which encompasses a wide range of dangerous drugs, the handling of which requires the supervision of a competent pharmacist. I am also aware that our residency training program will result in a desire of our medical officers to prescribe many mixtures

especially in the treatment of dermatological and ophthalmological conditions. It is not necessary for me to enlarge on the æsthetic qualities of an emulsion or ointment, nor the danger attendant in the preparation of ophthalmic solutions, nor the danger in dispensing of the many potent drugs without the constant supervision and vigilance of a graduate Pharmacist.

In order to insure the highest pharmaceutical service, I have directed that whenever and wherever possible a Medical Service Corps officer who is a graduate pharmacist will be assigned as the responsible officer in charge of the Hospital Pharmacy.

These positions are rapidly being filled, but many vacancies still exist which we intend to fill through the recall of Reserve Officers to extended active duty. That the Pharmacy Officer program has been wholeheartedly accepted by our Hospital Commanders can best be attested by our inability to receive concurrence for their transfer without documentary proof that a qualified replacement is forthcoming.

Many times projects are not completed as quickly as I would desire. One of those projects is the selection of the Chief of the Pharmacy, Administration and Supply Section, who will be a graduate pharmacist. We have not yet made any firm selection of this officer although the matter has been, and is being, given considerable thought by my staff. Another project of interest to you is the development of an Army Medical Department Hospital Formulary. Here again progress has been rather slow due to the inordinate workload of the Pharmacy officer responsible for its development in my office. The situation contributing to the suspension of this project is a temporary one and the prognosis for any early completion is good.

Personnel requirements are directly proportional to the missions prescribed to the Army. No one can predict the quantitative nor the qualitative factors involved in the event of any expansion of the Army with attendant expansion of the Medical Department. One thing is certain and that is, in

future emergencies, as in the past, the Regular Army Medical Department will furnish the administrative framework which must be augmented by talent drawn from civilian life. Nor is it within the sole province of the Medical Department to determine the best method for allocation of this talent in a future emergency. Wars are wasteful. We cannot, in this age of technological warfare, determine the numbers than can safely be earmarked for the Army and the numbers that will be required to safeguard the health of the civilian community. The corner drugstore is a national institution and an important link in the chain of public health and even more so in the event of total war. It still remains incumbent upon you and me to make every effort to insure that we have too many, rather than too few. By that I mean we must have an adequate, well-trained, well-informed reserve in being, ever ready to augment the Regular Army on short notice.

Earlier in my talk I explained that we were currently over-strength in the Pharmacy, Administration and Supply Section of the Regular Army Medical Service Corps. The same is not true of the Reserves. No ceiling limitations are imposed upon the civilian component of the Army by budgeting considerations as is the case in the Regular Army. I do not say that all of the positions in the Pharmacy, Administration and Supply Section of the Medical Service Corps need or should be filled by pharmacists, but I reiterate that their basic training makes them highly adaptable for the auxiliary Medical Services of the Army Medical Department.

Obviously, the Medical Department of the Army must be ready to function at all times, and if a sufficient number of pharmacists, who are otherwise qualified, do not avail themselves of the opportunity of a reserve commission, it will, of course, be necessary for us to develop our own personnel. It is in this phase of the development of the Medical Service Corps that we particularly require the cooperation of Pharmaceutical organizations and educational institutions. Authority presently exists for a Medical Service Corps Reserve. All

former officers holding a reserves commission in the MAC, Sanitary Corps and Pharmacy Corps were transferred to the MSC-RES, by Department of the Army Circular 35, dated 5 November, 1947. All commissions granted subsequent to that date will be made in the MSC-RES.

The implementation of existing legislation, insofar as reserve matters are concerned, is largely a matter of administrative procedures taken by the Department of the Army. In accordance with existing Department of the Army directives, pharmacists must possess the following qualifications to be eligible for a commission in the Medical Service Corps Reserve.

They must have a bachelors degree accruing from a full four-year course in pharmacy from an accredited school or college and in addition must have served either as an officer in any branch of the armed services during the war; or as a warrant officer or as an enlisted man in one of the first three grades. If in the latter category, he must not have attained his 28th birthday on the date of application.

Applications should be forwarded to The Adjutant General, U. S. Army, Washington 25, D. C. My office will be happy to furnish details and necessary application forms upon request.

Pharmacists who are currently commissioned in other Reserve Branches of the Army and who desire to transfer to the MSC Reserves may request transfer through normal reserve channels.

Another future source of procurement of pharmacists will be through our contemplated Pharmacy ROTC Program. We have recently contacted four schools of pharmacy and invited their applications for the establishment of a Pharmacy ROTC unit. To date we have officially received one application. We have been informally advised that the other three are being submitted.

Pharmacy ROTC units are a new venture with us, and we are anxious, as I know you must be, that they will be a suc-

cess. It is our intention to make it possible for the Assistant Pharmacy Professor of Military Science and Tactics to take further training in pharmacy at the graduate level.

Inasmuch as those pharmacy students who completed two or more years of duty in the military service are credited with the elementary ROTC course, we expect the first yield from our Pharmacy ROTC units to come from the graduating classes of 1949 and later.

It is also anticipated that normal attrition will provide a few vacancies in the Regular Army Medical Service Corps at about the same time.

A directive is currently being developed by the Department of the Army which will enable those graduate pharmacists, who are qualified, but were otherwise denied the opportunity of participating in a Pharmacy ROTC unit, to receive a direct appointment in the Medical Service Corps Reserve with or without prior military service. In those cases it will be necessary for the applicant to meet a board of officers and undergo certain screening procedures to qualify for their reserve commission.

To all pharmacists who apply for and receive appointments in the Officers Reserve Corps there devolves, to my mind, certain responsibilities of not inconsiderable import.

The acceptance of a commission should be only the first step along a road that is admittedly difficult. The officer owes to the nation and to himself the duty of constantly seeking in every way the knowledge and leadership required of an officer in time of peace and war.

If it could be said with assurance that the pharmacist officer, when called to active duty, would be utilized in the sole capacity of a pharmacist, the problems would be relatively simple. But such is not always the case.

The pharmacist, by virtue of his commissioned status, is first and foremost an officer. By that I mean that he must be qualified to take his place among those whose first concern must be the training and welfare of the enlisted man and even of his junior officers who will look to him for supervision and assistance.

A knowledge then, however extensive and keen, of pharmacy alone is not enough. With that in mind, permit me to mention briefly some of the problems peculiar to the military service with every officer to some extent, depending on the nature of his training and utilization, should be familiar: A knowledge of military organization and tactics, logistics, training methods and techniques, military law, sanitation, military records.

It is obvious from the mention of even these few items, that the pharmacist, certainly at least the pharmacist with little or no prior military training, must seek to acquire the additional training that can and will make him a valuable officer. Much of this training admittedly will require the reserve officer to donate a portion of his already too few leisure hours.

Through the medium of Medical Department extension courses he can acquire some of the knowledge required, and through the medium of seeking, whenever possible, short tours of active duty he can acquire additional knowledge and experience. An active, not passive, interest in Reserve affairs will keep him abreast of new trends and techniques of the Army Medical Department. The man who stands ready to help in these ways and more, we need and desire. This type of Reserve officer is the backbone of our civilian components of defense.

There were some 22,000 officers of the combined Medical Administrative, Sanitary and Pharmacy Corps on active duty during World War II. We do not know the number who came from the profession of pharmacy. Not all officers who served

in the recent war accepted a reserve commission upon separation from the service. It is important that we constantly replace recurring losses.

It is always a possibility that the numbers of physicians available to the Medical Department in the event of an emergency will approach an absolute minimum. In that case we would, of necessity, lean even more heavily upon our Medical Service Corps Reserve officer. Qualified pharmacists can insure an approach to adequacy both quantitatively and qualitatively by securing a commission in the Army Medical Service Corps Reserve.

And too, after receiving his reserve commission, it is incumbent upon him as well as all other Medical Department Reserve Officers to maintain an active interest in Army affairs.

We are by nature and concept of government not militaristically inclined. Our strength has always rested in our citizen soldiers. A well-informed citizenry, alert to the needs of the nation, has always been and is now the keystone to our freedom.

DATA CONCERNING SOUTH AND CENTRAL AMERICAN SCHOOLS (continued)

Replies on Pharmacy Schools in Costa Rica

- 1) Escuela de Farmacia de la Universidad Nacional (San Jose).
- 2) Licenciado Gonzalo Gonzalez Gonzalez.
- 3) Complete and compulsory pharmacy course.
- 4) 11 professors.
- 5) Average of 150 students.
- 6) Four years.
- 7) 1897.
- 8) After functioning independently for nearly 50 years, it now comprises part of the National University.
- 9) Licenciado en Pharmacy. (Actually, "Licensed" in Pharmacy). Our representative is writing the College of Pharmacists and National Association of Pharmacy for detailed information to be sent to Dr. Wilson, with particular regard to the 50th Anniversary of the School of Pharmacy.

The Future of the American Institute of the History of Pharmacy, Inc.

ARTHUR H. UHL

University of Wisconsin

The Three Pillars of Maintenance

There are three main pillars on which the future of every institution depends:

1. The soundness of its goals.
2. The adequacy of its work.
3. Its financial backing.

I deliberately listed the financial backing last, important as it is, since it is the result of, rather than a condition for the soundness of the goals concerned and the adequacy of the work done in order to reach these goals.

Help in the Past

The development of the American Institute of the History of Pharmacy has proved this thesis. We started on a shoestring with almost nothing but a place to work, a man to do the work and the conviction of the necessity of this particular type of work as a completion of the scope of the profession hitherto not sufficiently served. Our confidence was never betrayed. Whenever we were in need, and that happened every year, we were helped by men of good will, insight, and foresight. It is my pleasure to extend once again my thanks to all the people who joined us and helped us to go on, foremost among them Dr. E. L. Newcomb, Executive Secretary of the National Wholesale Druggists' Association, and especially our friend, Mr. A. J. Horlick, President of the Horlick's Malted Milk Corporation.

* Presidential address presented at the Sixth Annual Meeting of the Institute on April 1, 1948 at Milwaukee, Wisconsin.

Symbiosis Between the University of Wisconsin and the American Institute of the History of Pharmacy

It was with the encouragement by Mr. A. J. Horlick, the President of the University, Dr. Fred, and the Dean of the College of Letters and Science, Dr. Ingraham, that in the fall of last year a step was taken which connected the Institute and its work still closer with the academic world than it had been before. This step was the appointment of the Director of the Institute as Professor of the History of Pharmacy at the University of Wisconsin, thus creating the first full professorship for this branch of science not only in the United States but in the world. It can be said and proved that this symbiosis opens a very promising outlook into the future.

The mutual advantages accruing from this symbiosis for the University as well as for the American Institute of the History of Pharmacy are obvious. It makes the cooperation of the incumbents of both offices, the professorship and the directorship of the Institute, with the members of the other departments of the University and especially with the historians of science and of medicine, a matter of course to the benefit of all. By taking root in academic soil the Institute gains solidity in more than one respect, while simultaneously bringing to the University the international connections which fit so well into the international renown which this University in general is enjoying and is eager not only to maintain but to extend. Finally, by offering regular courses in the history of pharmacy for undergraduate as well as graduate study that can be built on resources of a multitude and variety scarcely equalled anywhere, the professorship just in its connection with the Institute gives all guarantees possible for the spread of the knowledge and insight which it is to create and to convey.

Objectives of the American Institute of the History of Pharmacy

The objectives of the American Institute of the History of Pharmacy have been laid down in the Articles of Incorpora-

tion and have been alluded to on other occasions. However, I feel that they have to be repeated at this point in order to be interpreted in the light of the new development.

1. Research.
2. Education of experts (future teachers) in the field.
3. Cooperation with historians of science and related professions and doing pharmacy's part in making the history of civilization as complete as possible.
4. Spread of knowledge of the history and tradition of pharmacy among the members of the profession.
5. General information service.
6. Collecting, archiving and exhibiting items of pharmaceutico-historical interest.
7. Acting as an international center for the history of pharmacy.

Of these seven objectives the three first ones simply ask for a close connection with the facilities and potentialities of a great university. The last four will to a great extent remain the domain of the Institute. Their accomplishment will likewise be helped by the symbiosis between University and Institute. They must, however, be left open to the cooperation, if not even to a kind of part ownership of the entire pharmaceutical world.

*Partnership of Pharmacy as a Whole in the
American Institute of the History of Pharmacy*

This has been our idea from the very start: Partnership of Pharmacy as a whole in the American Institute of the History of Pharmacy. It is the interests and the reputation of all branches of pharmacy, retail as well as wholesale, manufacturing as well as scientific, research and teaching, which the American Institute of the History of Pharmacy has been determined to serve and has served during the first seven years of its existence.

In order to make this partnership possible, we organized the Institute as an incorporated institution which anyone interested in the History of Pharmacy is able to join, and kept the individual fees low. We have not entered into a big cam-

paign. All that spoke for us was our work. On this basis and on it only about 200 people accepted the partnership which we were offering and became members of the American Institute of the History of Pharmacy.

This is very encouraging, indeed. It is by no means enough. We know that we cannot expect to get the masses into partnership. That has not been possible in any other similar field, and we cannot expect it in ours. But, in looking at our sister profession, medicine, for example, we see that the American Association of the History of Medicine, has about 500 members. This is the number of people actively interested in the intellectual and traditional aspects of the profession which we think ourselves entitled to expect of pharmacy.

No institution of this kind, and the American Institute of the History of Pharmacy does not make an exception, can live and work on individual membership fees only. They need a well-organized financial backing, a guaranteed budget taking care of its present and allowing planning for the future. There has to be assistance, clerical help, money for publications, traveling, postage, etc.

FUTURE NECESSITIES

Upon the appointment of the Director of the American Institute of the History of Pharmacy as a member of the faculty of the University of Wisconsin School of Pharmacy he now receives his salary from the University and not from the Institute, although he still is devoting part of his time to the tasks of the Institute. Since, as pointed out above, this is to the benefit of both parties, that is as it should be, However, one question becomes urgent: that of an assistant ~~who takes over~~ some of the duties of the Director and grows into the field thus simultaneously warranting the continuation of the work.

In other words, the situation as it is and as we want it to develop requires in the very near future:

1. An assistant to the director.
2. Clerical help for typing, filing, etc.

The second need can be met if an adequate salary can be offered. The first one cannot be solved by money alone. It is based on quite a number of personal requirements to be met by the man in question. It is a fortunate meeting of a respective inclination on the part of the presumptive assistant and the opportunity offered by the Institute when the right man can be found. Such a man seems to be available. We have to act quickly to secure him by offering him a modest livelihood.

I think the Institute is entitled to approach our pharmaceutical industrialists and other individuals and groups related to the profession. They have always proved themselves to be generous. What we ask is little. What we are trying to achieve is unlimited.

**DATA CONCERNING SOUTH AND CENTRAL AMERICAN
SCHOOLS (continued)**

Replies on Pharmacy Schools in Panama

- 1) Universidad de Panama (Presumably in Panama City).
- 2) Don Alejandro Mendez.
- 3) All courses are obligatory:
 - 1st year:
Elemental English, Civilization, General Chemistry, Pharmaceutical General Physics; General Botany.
 - 2nd year:
Intermediate English, Qualitative Analytical Chemistry, General Bacteriology, General Biology, Quantitative Analytical Chemistry, Pharmaceutical Botany, Pharmaceutical Physics.
 - 3rd year:
Organic Chemistry, Theoretical and Practical Pharmacy, Pharmacognosia, Physiology and Hygiene.
 - 4th year:
Biological Chemistry, Medical Matter, Toxicology, Food and Drugs.
 - 5th year:
Professional Practice, Prescriptions, Professional Orientation, Pharmaceutical Technology.
- 4) 15 professors.
- 5) 75 students.
- 6) Five years of study.
- 7) In 1935, as part of the University.
- 8) Functions as a school of the Faculty of Medical Sciences.
- 9) License or Degree in Pharmacy.

Reports of Committees and Delegates to be Presented at the 1948 Meeting in San Francisco*

Report of the Chairman of the Committee on Relation of Boards and Colleges

In 1948, as was the case in 1947, meetings were held as scheduled in each of the eight districts of the boards and colleges of pharmacy. Districts seven and eight held a joint meeting at Salt Lake City, while separate meetings were held by each of the other six districts within a period extending from March 15 to May 21. The total attendance for all meetings was approximately 372 as compared with approximately 335 for the eight district meetings held in 1947.

As a result of the suggestions made jointly by the Executive Committees of the National Association of Boards of Pharmacy and the American Association of Colleges of Pharmacy a number of identical topics were placed upon the agendas of all meetings. This explains the adoption of similar resolutions or resolutions dealing with the same topic in more than one district. The list of resolutions which has been forwarded to the Secretary of the American Association of Colleges of Pharmacy for transmittal to the Committee on Resolutions is divided into two parts as follows: (1) Resolutions requiring action by the Committee on Resolutions and the American Association of Colleges of Pharmacy and (2) Resolutions dealing with matters of regional interest requiring no action by these groups but included in the report be-

* These reports represent all that have now reached the Editor at the time of closing forms for the July issue. The remaining reports which will be read at San Francisco will appear in the October issue.

cause of their value as information for the membership of the American Association of Colleges of Pharmacy.

Mr. P. H. Costello, Secretary of the National Association of Boards of Pharmacy, attended all meetings. He presented a set of board of pharmacy records to be used as a model for boards to adopt, and by participating in the general discussions of other topics, added much to the success of the seven meetings.

Brief summaries of the reports of the meetings follow:

DISTRICT NO. 1

(Maine, New Hampshire, Vermont, Massachusetts, Connecticut, and Rhode Island)

This meeting was held at the College of Pharmacy, University of Connecticut on April 19-20. Sixty-eight delegates were in attendance. Prof. Ray S. Kelley was re-elected as secretary, and Dean C. Newton as treasurer. Prof. J. Stoklosa was appointed as chairman of the program committee. Mr. John A. Pelchar of the Connecticut Commission of Pharmacy was recommended for appointment as chairman for the boards and Dr. Heber W. Youngken of the Massachusetts College of Pharmacy as chairman for the colleges. Next year's meeting will be held in Boston.

DISTRICT NO. 2

(New York, New Jersey, Delaware, Pennsylvania, Maryland, District of Columbia, Virginia and West Virginia)

District No. 2 met in New York City on March 21-23 at the Hotel Pennsylvania with 80 delegates present. The chairmen for next year recommended, are, for the boards, Mr. Ralph J. Walker of Newport News, Virginia, and for the colleges, Dean Hugo H. Schaefer of the Brooklyn College of Pharmacy, Long Island University. Next year's meeting will be held in Richmond, Virginia.

DICTRICT NO. 3

(North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee and Puerto Rico)

District No. 3 met at Chapel Hill, North Carolina on April 5-6 with 36 delegates in attendance. Chairmen recommended for appointment for next year are Mr. Robert T. Walker of the Tennessee Board of Pharmacy, for the boards, and Dean Marion L. Jacobs of the School of Pharmacy, University of North Carolina, for the colleges. Next year's meeting is to be held in Charleston, South Carolina.

DICTRICT NO. 4

(Illinois, Indiana, Kentucky, Michigan, Ohio, and Wisconsin)

The meeting of District No. 4 was held in Indianapolis, Indiana on May 3-4 with 49 delegates in attendance. New officers recommended for appointment for next year include Mr. William P. Murray of the Ohio Board of Pharmacy, as chairman of the boards, and Dean Lyell J. Klotz of the College of Pharmacy, University of Cincinnati as chairman for the colleges. Next year's meeting of District No. 4 will be held in Cincinnati, Ohio.

DISTRICT NO. 5

(Iowa, Minnesota, Nebraska, North Dakota, South Dakota)

The meeting of District No. 5 was held in Des Moines, Iowa on May 20-21, with 40 delegates in attendance. And in the absence, due to illness, of Mr. A. O. Gordon of the Nebraska Board of Pharmacy, Mr. John F. Rabe, secretary-treasurer, presided as chairman for the boards. Officers recommended for appointment for next year were Mr. Homer L. Hill of North Dakota as chairman for the boards. Officers Prof. Clark T. Eidsmoe of the Division of Pharmacy, South Dakota State College for the colleges. Mr. John F. Rabe was re-elected secretary-treasurer. The next meeting for the Fifth District will be held at Rapid City, South Dakota.

DISTRICT NO. 6

(Arkansas, Kansas, Louisiana, Missouri, Oklahoma, Texas)

District No. 6 met in Oklahoma City, Oklahoma March 15-16, with 46 delegates in attendance. Officers recommended for appointment next year include Mr. C. R. Counts of Arkansas as chairman for the boards, and Dean John F. McCloskey of the New Orleans College of Pharmacy, Loyola University, as chairman for the colleges. Dr. Ralph W. Clark was elected secretary-treasurer. The next meeting of this District will be held in New Orleans, Louisiana.

DISTRICTS NO. 7 AND 8

District No. 7 (Idaho, Montana, Oregon, Washington, Wyoming, Alaska)

District No. 8 (Arizona, California, Colorado, Nevada, New Mexico, Utah)

In accordance with plans made last year, a joint meeting of Districts 7 and 8 was held in Salt Lake City, Utah on April 26-27, with a total of 53 delegates registered, 30 of whom were from District No. 7 and 22 accredited to District No. 8. Dean C. H. Waldon of the School of Pharmacy, State University of Montana was recommended for appointment as chairman for the colleges and Mr. J. J. Lynels for the boards for District No. 7. Dean C. F. Poe of the College of Pharmacy, University of Colorado was recommended for appointment as chairman for the colleges and Mr. John J. Black of Winnemucca, Nevada for the boards for District No. 8. Prof. Bernard A. Bialk of the University of Arizona was appointed secretary of District No. 8. Dr. Haakon Bang was re-elected secretary of District No. 7. Next year's meeting for District No. 7 is to be held at Missoula, Montana, and District No. 8 will meet in Reno, Nevada.

Joseph B. Burt,
General Chairman

**RESOLUTIONS ADOPTED BY THE 1948 MEETINGS
OF THE A. A. C. P.—N. A. B. P. DISTRICT
MEETINGS**

**I. RESOLUTIONS REQUIRING ACTION BY THE
COMMITTEE ON RESOLUTIONS**

1. **BE IT RESOLVED** that graduated prescription bottles be eliminated for the best interest of the public health and safety and that a copy of this resolution be sent to the manufacturers of bottles.—Dist. No. 1.

2. **BE IT RESOLVED** that District No. 3 recognize the desirability of eliminating the use of graduated prescription bottles.—Dist. No. 3.

3. **WHEREAS:** Recognizing the danger in the use of graduated prescription bottles, because of variance in accuracy and the fact the Boards of Pharmacy may establish regulations for their discontinuance, **BE IT RESOLVED** that this body go on record expressing satisfaction on the discontinuance of the manufacturing of graduated prescription bottles.—Dist. No. 5.

4. **BE IT RESOLVED** that the A. A. C. P., through its President take prompt action in approving the recommendation of each district relative to their selection of the chairman for the colleges, and that this approval be given at some time during the convention week.—Dist. No. 2.

5. **BE IT RESOLVED** that it is the opinion of the Boards and College members of District No. 2 that statistics such as supplied in Assembly 5 of The Pharmaceutical Survey should be made available on a nationwide basis by the N.A.B. P. or the A.A.C.P., after this work is discontinued by the surveyor, and

BE IT FURTHER RESOLVED that in any event, the Committee to Obtain Statistical Information on the Needs for Pharmacists in District No. 2 be continued and that it supply similar data each year to this district.—Dist. No. 2.

Note: (The document mentioned is Fact Finding Assembly No. 5, Supply and Demand for Registered Pharmacists—General Chairman, Committee on Relation of Boards and Colleges of Pharmacy).

6. **BE IT RESOLVED** that the members of District No. 3, A.A.C.P. and N.A.B.P. recommend that the Professorial Lectureship tours be considered as desirable and be put into effect when possible.—Dist. No. 3.

7. **WHEREAS:** Public health and safety are primary functions of pharmacy,

BE IT RESOLVED that District No. 4 go on record opposing regulations permitting the operation of any portion of the pharmacy in the absence of a registered pharmacist or legally qualified assistant by placing the prescription department and specified drug items under lock and key.—Dist. No. 4.

8. BE IT RESOLVED that District No. 4 go on record as not favoring the practice of printing the pharmacist's store name on the prescription blanks which he gives to doctor and dentists.—Dist. No. 4.

9. BE IT RESOLVED that the members of District No. 4 urge that all states consider the adoption of regulations to require hospitals with twenty-five or more beds to maintain adequate pharmaceutical service under the supervision of a full-time or part-time registered pharmacist.—Dist. No. 4.

10. BE IT RESOLVED that the members of District No. 5 commend the National organizations in their vigilance and prompt action in recognizing misleading advertising pertaining to the profession.—Dist. No. 5.

11. RESOLVED that the A. A. C. P. publicize in a suitable manner the six semesters residence requirement in our schools of pharmacy in order that our non-pharmacy colleges will be thoroughly familiar with these regulations of the A. A. C. P.—Dist. No. 6.

Note: (This requirement is that of the American Council on Pharmaceutical Education and not that of the American Association of Colleges of Pharmacy, as stated in the resolution—General Chairman, Committee on Relation of Boards and Colleges of Pharmacy).

12. RESOLVED that serious consideration be given to the requirement of the A. C. P. E. in the development of graduate schools in so far as it pertains to the teaching in such schools, and condemn the policy of exploiting the graduate student by placing the responsibility of undergraduate teaching on him.—Dist. No. 6.

13. Realizing the necessity and value of a complete Roster of all Pharmacists in the United States and its possessions,
BE IT RESOLVED that the Sixth District urge the National Association to begin the compilation of such a Roster and,
BE IT FURTHER RESOLVED that this District appoint a committee to begin the compilation of a Roster of all Pharmacists of this District.—Dist. No. 6.

14. BE IT RESOLVED that Districts 7 and 8 call attention to the American Council on Pharmaceutical Education and the Executive Committee of the American Association of Colleges of Pharmacy the excessive teaching load being assigned to the faculty members in the colleges, and
BE IT FURTHER RESOLVED that the Council and Executive Committee encourage the colleges of pharmacy to request appointments on

the basis of 50 per cent time for research and 50 per cent time teaching load. This resolution is made with the full realization of the shortage of competent teachers and is intended only for the purpose of planning for the future.—Dist. No. 7 and 8.

15. BE IT RESOLVED that this conference request that the pharmaceutical manufacturing houses give more favorable consideration to the schools of pharmacy in the issuance of grants for research, and BE IT FURTHER RESOLVED that the American Journal of Pharmaceutical Education be asked to prepare suitable editorials on the subject of the establishment of such grants.—Dist. No. 7 and 8.

16. BE IT RESOLVED that the Boards of Pharmacy make intensive effort to secure adequate information as to the results to be expected from the Supreme Court decision in the Sullivan Case, and that such information be disseminated among the pharmacists of the various states;—Dist. No. 7 and 8.

17. BE IT RESOLVED that Districts 7 and 8 A. A. C. P. and N. A.B.P. give consideration to the establishment of student district organizations and that each college of pharmacy send student representation to the annual meetings of the districts.—Dist No 7 and 8

18. WHEREAS two revisions of the official compendia have taken place since the last identification list was adopted,
BE IT RESOLVED that the revised identification list be adopted as presented

BE IT FURTHER RESOLVED that the State Board Examination in identification be of the labelled type, that is, (1) either label all individual samples presented to the candidates and require the answer to be true or false, (2) identify by the use of an accompanying list.—Dist. No. 7 and 8.

II. RESOLUTIONS DEALING WITH MATTERS OF REGIONAL INTEREST NOT REQUIRING ACTION BY THE COMMITTEE ON RESOLUTIONS

1. BE IT RESOLVED that each State Board be requested to consider advisability of holding examination clinics in the major fields of examination, to which clinic they would invite college faculty members to consider problems of mutual interest.—Dist. No. 2 .

2. BE IT RESOLVED that the 29 drugs approved by the Special Committee on Pharmacognosy be deleted from all future Board examinations and that the Secretary of District No. 2 shall so notify each Board in this district.—Dist. No. 2.

3. BE IT RESOLVED that the members of the Colleges and the Boards of District No. 4 commend the Special Committee of the N. A. B. P. on the progress which has been made in developing forms for use by Board secretaries for the recording of statistical data on registered pharmacists, as reported by Executive Secretary Costello, and
BE IT FURTHER RESOLVED that we urge the immediate adoption of these forms or suitable variations thereof.—Dist. No. 4.

4. WHEREAS a majority of the State Boards of Pharmacy have adopted the standards of supervised drug store experience as recommended by the N. A. B. P. at their 1947 annual convention, and WHEREAS only two of the states in this district have instituted the plan;
BE IT RESOLVED that the members of District No. 4 urge the immediate consideration of adoption by the remaining states.—Dist. No. 4.

5. Realizing that there is a definite need for an acceptable method to evaluate students seeking admission to our pharmacy colleges,
BE IT RESOLVED that this District appoint a committee to study this problem and to suggest some methods for evaluating of students, and to report their findings at the next meeting of the District.—Dist. No. 6.

6. College textbook prices have risen, and the library discounts on certain reference and textbooks have decreased, moreover, there have been eliminated from normal channels of distribution the privilege of purchase of many of the books on the usual basis and procedure.
BE IT RESOLVED that a committee be appointed to make a study of the sale and distribution of text and reference books, and to report their findings at the next District meeting.—Dist. No. 6.

7. RESOLVED that the State Boards of Pharmacy devote more of their examining time to practical pharmacy.—Dist. No. 6.

8. BE IT RESOLVED that in order to obtain the greatest cooperation of our pharmaceutical bodies in attempting to solve our mutual problems, the officers of the State Pharmaceutical Associations of this District be invited to participate in the discussions at our annual meetings.—Dist. No. 6.

9. BE IT RESOLVED that this conference urge consideration of the establishment of pre-pharmacy training as a requirement for the entrance into the schools of pharmacy.—Dist. No. 7 and 8.

MARRIAGES

Prof. Frank P. Pitts, Medical College of Virginia, and Marion Dikeman Palmer on April 30, in Richmond.

Report of the Chairman of the Committee on the Status of Pharmacists in the Government Service

In view of the happenings in Washington during the last week end I thought it appropriate to call a meeting of the Steering Committee. It is indicated that we reevaluate the situation from time to time, particularly since so many of the government agencies are being reorganized at this time with regard to pharmacy. Dr. DuMez had to attend a meeting of the American Council on Education in Chicago during the same time. However, I felt that the importance of the occasion made it possible for me to get some questions answered that might be considered important as well as promoting the Committee's objectives.

The questions which we desired answered by the Army and Navy have to do with the number of pharmacists they are taking on; the work to which pharmacists are being assigned; the difficulties if any, in securing the number of pharmacists desired; whether the Army and Navy are satisfied with the kind of pharmacists they are getting; the Public Health Service and their requirements; the coming examinations for existing vacancies; the Veterans Administration and the promotion problems that disturb those with less than B. S. attainments who have been in the department for many years.

Some of the questions I hope to answer in this report as well as others which arose during discussions with Congressman Carl T. Durham of the Armed Services Committee; George Archambault, Chief Pharmacist of the Public Health Service; E. Burns Geiger, Chief Pharmacist of the Veterans Administration; Commander E. Paul Briggs of the Navy Medical Service Corps; and a long visit with Colonel Goriup in the offices of the Surgeon General of the Army. Some of the questions were answered during the discussions.

Mr. Durham discussed the new Selective Service Bill H. R. 6401, which I understand has just passed the House Armed Service Committee. The bill sets the Army at 837,000, the Navy at 666,882 and the Air Force at 502,000. This will naturally increase the requirements for the Medical Service Corps particularly of the military establishments. (Army and Air Force). Page 5 of the Bill mentions pharmacy among the other medical professions for special calls for service. The plan will probably set up selection of pharmacists by a procurement board of its own profession similar to the medical set up during the war. The figure in the Bill calls for draft of pharmacists not to exceed one for each 3,000 men. The medical figure arrived at is 5 doctors of medicine per 1,000 men. We must examine this provision most carefully since it would mean in an army of 10,000,000 men only 3,666 pharmacists would be needed. We must assume that the number would be for purely professional duties and not for the many duties that pharmacists could capably fill as outlined in our "Blue Print" now in effect in the office of the Surgeon General of the Army. Mr. Durham is to be commended for getting the profession of pharmacy mentioned in the Bill. I believe there is nothing in the Bill that will limit the number of pharmacists who serve. It only insures, that if there are not enough pharmacists in the services for pharmaceutical service, pharmacists may be drafted up to the age of 45 to guarantee that there will be at least 1 pharmacist in the service for each 3,000 men. This is, in my opinion, a challenge to supply adequate pharmaceutical service.

We must however be sure that the Department of the Army, Navy and Air Force will not assume that this will be the limit of pharmacy's contribution to the commissioned services.

The Army figures indicate that there are over 700 persons in the Pharmacy Administration & Supply Section of the Medical Service Corps. Of these only 75 are pharmacists. The others are transfers from the Medical Administrative, Pharmacy and Sanitary Corps. This section, as far as the

Army is concerned, is pretty well filled. Vacancies will be held for the R. O. T. C. graduates of the future. The head of the section however must be a pharmacist and the department is going ahead with its selection. The selection is being carefully made. One of the officers under consideration is a Major, Medical Service Corps, who holds in addition to his B. S. in Pharmacy and A. M. in Chemistry, and who has requested an assignment as an instructor in one of the newly organized R. O. T. C. units in one of the colleges. If assigned to one of these units he would be permitted to take graduate work that would lead up to a doctorate degree. This officer was formerly a teacher in one of the colleges of pharmacy. This is the type of man that the Surgeon General is attempting to select as head of the Section.

There is a need at the present time for officers for the Allied Science Section of the Medical Service Corps. This is to be 30 per cent of the Corps and the requirements are personnel trained in physiology, psychology, biochemistry, nutrition, serology and other related medical sciences needed in the Army. If you have such people in the post graduate field of pharmacy, many desirable spots may be found for them in both the Army and Navy. Applicants who qualify may direct their requests now. Ranks higher than the initial rank of 2nd Lt. and Ensign are available to those who qualify. It would seem that some of our graduate work in the colleges might soon be directed to this new avenue of opportunity in the Armed Services.

It is understool that four officers of the Medical Service Corps who are pharmacists will be selected before July 1st to take up their duties as instructors of medical science and tactics in the four pharmacy schools that were selected for the initial formation of units. I understand there have been some sixteen applicants for these assignments which will include an opportunity for graduate work leading to Master's or Doctor's degree. It must be pointed out here that colleges that can offer this type of work may be the only schools that will be considered for future R. O. T. C. units. This calls for an examination

of the potentialities of all the pharmacy schools to this end. However, I feel that the schools understand this position pretty well and that the majority will ultimately meet the requirements. While the contracts between the four colleges previously mentioned for Army R. O. T. C. have not been entirely completed, it is felt that the officer assignments will be made by July 1st, and that the units will be functioning from the beginning of the fall school term. The present plan calls for competitive tours of duty to be available to R. O. T. C. graduates, with a view to obtaining permanent commissions in the Regular Army. Others will have an opportunity to hold a Reserve Commission. Reserve Commissions, as I understand it, will also be available to graduates of other schools not having R. O. T. C. units. In any case, however, a commission will not be available to all. The graduate must demonstrate his fitness first of all to be an officer. This will require his passing an examination before a capacity board of officers plus other qualifications.

While in Colonel Goriup's office I interviewed one officer of the Medical Service Corps, a Major and a pharmacist. His duties consisted, among other things of being a supply-procurement-pharmacy officer and a commissary officer at a large General Hospital. From what I learned in Washington, his work is satisfactory in every respect and he is being considered for another assignment that will give him greater opportunities to show what the officer, trained in pharmacy can do.

Commander Paul Briggs reiterated the announcement of the Surgeon General of the Navy, Admiral Swanson, that the civilian pharmacists with the B. S. degree may now apply for immediate commissioning in the Medical Service Corps (Pharmacy) of the Naval Reserve. 240 inactive volunteer Medical Reserve Divisions are being organized, each of which will require two pharmacy officers. Up to now these vacancies were only available to war time officers. For the first time they are available to pharmacists who have never had a naval commission. It is hoped that full publicity will be given this and that qualified pharmacists will apply. They may apply to any naval procurement office. Commissioned officers of the Naval

Reserve who are pharmacists and in some other branch of the Navy may request this reclassification in the interest of their profession. At the present time appointments in the Regular Navy are restricted to officers who served on active duty as a Temporary or Naval Reserve Officers prior to December 31, 1946. A bill, H. R. 5983, now before Congress, will open commissions in the Regular Navy to all those who hold a B. S. degree in Pharmacy, from civilian life. This bill has the support of this committee and advices from Chairman Andrews of the House Armed Services Committee indicate that it will have the support of his committee and should be shortly enacted into law.

George Archambault, Chief of the Pharmacy Division of the United States Public Health Service, said that up to now about 500 applications for existing vacancies in the PHS Pharmacy Division have been received. As I understand it, about ten will be selected from the coming examinations but the work of filtering into the service a sufficient number will go on periodically until all the vacancies are filled. Some reasons for not making all the selections now are: (1) care to be taken to get all top flight men; (2) not to create a promotion "hump" by having too many appointments at one time. We must realize that the other professions have been in for a long time—we have got to feel our way a bit gradually. Application deadline for the coming examination May 21, 1948—Examinations will be held June 21, 22 and 23, 1948.

E. Burns Geiger, Chief of the Veterans Administration Pharmacy group, stated that bill H. R. 5577 to amend the law setting up the Bureau of Medicine and Surgery of the VA will not be reported out of committee as he sees it. This bill was designed to correct a promotion provision in VA that limited promotions to only those who had a B. S. in Pharmacy. There are many pharmacists in VA who are earlier graduates and do not thus have a B.S. These men, many of whom have given long years to the Service, were seemingly restricted for promotion by law. The Department received many complaints on this, as did legislators. I have also had some letters sent

on to me through members of this committee from pharmacists in VA who claimed this ruling to be a discrimination. The above bill was introduced to correct this. Chief Geiger stated to me that a solution is being found. That the Service Commission (Civil Service) is going to send out a ruling shortly—that the services of these two and three year graduates will be considered a promotion equivalent. This I believe will be a satisfactory solution since nothing will be done to weaken the structure of the original bill which limits all future appointments to those who are graduates of accredited colleges of pharmacy with the four year minimum and the B. S. as the basic requirement.

During the year it has not been necessary for us to call a meeting of the full committee. Several meetings of the Steering Committee have been held and many of the problems have been handled quickly and expeditely by Dr. Fischelis and George Frates, members of the Steering Committee, who are almost constantly on the scene. Constant liaison is being maintained at all times with the important agencies that take care of our pharmaceutical problems and the problems of the pharmacists in the Services. I know that you will join me in expressing our thanks to them for the splendid work they are always doing for us. Now that we have pharmacists in the key positions of these services much of the physical activity of this committee has been lessened. However, it still becomes necessary for us to study measures that affect pharmacy, and support or oppose those that influence our profession. I will continue to direct your attention to those problems that I feel you should know about and to get your reactions, recommendations and criticisms.

I would appreciate your study of this report and would like your recommendations and advice. If you should like more information on any point in this report I will be happy to elaborate more fully.

Arthur H. Einbeck,
Chairman

The Report of the Chairman of the Committee on Problems and Plans

It seems necessary from year to year to remind even the personnel of this committee what its functions are. This is evident from the current report. Some of the committee members state that they do not think the study of a certain problem or the rendering of a certain service is the function of this committee. When the committee was first created it was with the idea that it should study the problems of pharmaceutical education as they arose and organize and assign such studies. In 1946 when a Committee on Committees was appointed for the purpose of defining the functions of the various committees, the function of the Problems and Plans Committee was defined as follows: "It shall be the duty of this committee to bring before the Association problems pertaining to professional education and to education in general and to call particular attention to those areas where general educational problems apply to pharmaceutical education; it shall also be the duties of this committee to define problems that pertain to pharmaceutical education and the welfare of the Association and to initiate the study of such problems and suggest plans for attack upon them." In other words, it seems that practically everything that concerns pharmaceutical education falls within the range of this committee's work.

As a matter of fact, in attempting to carry out its functions and without any apparent effort on the part of anyone, the activity of the committee seems to have followed along the lines of a pharmaceutical Gallup poll to ferret out the thinking of men and discover the trend of pharmaceutical thought as related to the needs of pharmaceutical education. After all, it is the thinking of men that determines the course of action.

Frequently the wisdom of having a committee of this size has been questioned, and well it might be if it were an administrative committee. But it is not. As a trend-finding committee it has attempted to pull into the limelight and to center thought and study upon those problems that are currently of the greatest importance to pharmaceutical education and practice.

During its time it has offered but few recommendations. To stimulate thought has been held to be of the greater importance. Action will follow in due time, as the history of this organization shows. Rather than reduce the size of the committee and thereby limit the range of thinking, it would seem to be wise to hold the membership to the present number or even increase it if by so doing we can obtain a more all-inclusive vision of the educational needs of pharmacy.

While everyone is inclined to rest on his oars as the time for the announcement of the results of The Pharmaceutical Survey approaches, this report is presented to show that The Survey has not narcotized the thinking going on in the minds of the members of this committee. Other factors have stimulated their thinking. Two of these other factors are hard work and overtime on the part of its members. These factors, common belief to the contrary, do make men think.

From members of the committee and from various other sources have come certain problems which have been submitted to each member of the committee. These problems have been summarized under eight headings and numbered as indicated in the report. Following the statement of each problem is given the thought as expressed by each member of the committee who has expressed an opinion, and the name is attached. This is done because a personal statement carries more force than an anonymous one.

As might be expected, the problem uppermost in the minds of the committee is the improvement of teaching. This

was the object of the establishment of the teachers' conferences. Interest has been increased by The Pharmaceutical Survey and especially by the discussion and comments by Dr. E. C. Elliott in one of our general sessions at the Milwaukee meeting. This led me to place before the committee the following question:

Question No. 1—Will you state your own experience as to how you have improved your teaching methods?

Replies:

"I am greatly interested in the improvement of instruction. The phrase has such good implications that it is puzzling to find so little done about it. I am particularly lead to consider that there is a general apathy on the subject from an experience which I had here when I was appointed to a newly-formed, all-university 'Committee for the Improvement of Instruction'. We wasted our time in abstract discussions, avoiding such direct approaches as an optional course in the department of speech for teachers interested in improving their articulation, and ended, after three years, by our one unanimous decision, that the committee be dissolved.

"I dislike to consider that other teachers of pharmacy were probably pressed into service as casually as I. Overlooking a very good professional education which should not be misconstrued to a belief that teaching requires exactly the same talents as learning, I found myself teaching in a university with the thought that there probably wasn't a single state which would consider me qualified to teach in a high school.

"The methods used by most teachers are, for the most part, the very methods by which they were taught. Thus, good teaching is passed along, but sometimes the teaching is not good.

"My teaching has improved in spite of the lack of an organized effort to that end and in spite of the absence of any organized aids. My colleagues have been the sources of help. To give a few examples, Prof. Rose showed me a better way to reduce metric formulas to apothecaries' units. Dr. Thompson had a more direct method for calculating pH from hydrogen-ion concentration. Dean Jacobs had the best method for recording absences. These and many more are little things, but they add to a total that is significant.

"It is encouraging to learn that a concerted effort for the improvement of instruction is being made this year with the institution

of formal courses for that purpose on two pharmaceutical subjects this summer under the leadership of The Pharmaceutical Survey.

"I would summarize something like this: The best motivation for the improvement of instruction is a consciousness of its possibility. It is the satisfied teacher who doesn't improve, which is a negative way of putting it. Based on this, I would include the following adjuncts:

- (a) Thinking. The teacher should, on frequent occasions, think about his teaching methods, their effectiveness with his classes, and their improvement.
- (b) Energy. Good teaching requires a lot of work. This includes keeping abreast with developments, etc. It also includes work in the laboratory. I found that the best method of encouraging students to prepare better aromatic waters was to assay their preparations. As another example, in assaying student preparations of two fluid ounces of a 1:1,000 mercuric chloride solution the variation was found to be from 15 to 400 per cent of the correct amount. Less than 15 per cent of the samples fell within a tolerance of 20 per cent. The next year, a similar class with the same equipment plus a warning that the samples would be assayed turned in products, all falling within a 20 per cent tolerance.
- (c) Exchange of ideas. Immediate colleagues, conventions, teachers' conferences, and the American Journal of Pharmaceutical Education are good sources for information and ideas on the improvement of teaching." E. A. Brecht, University of North Carolina.

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"As to improvement in teaching methods, I have tried as much as time has permitted, to make advancement. One thing I have done is to revise, from time to time, the content of courses, discarding what I consider less important, and adding interesting material. It is also my aim to be logical and systematic in the presentation of subject matter and, where possible or desirable, relate the material to other branches of learning. Frequently I give references to articles in scientific and professional journals, and to periodicals, such as the National Geographic and Readers Digest.

"For measuring progress of the class, I conduct weekly written quizzes on both class room and laboratory work. Demonstration and display matter has been and is being gradually added.

"No one can do a good job if he is required to carry more than fifteen clock hours as a maximum; even this may be too much under certain circumstances, such as size of classes, amount of written

work given, etc. There are many, including myself, who have been expected to carry as many as twenty-four clock hours in a variety of subjects. Furthermore, these men are expected to show vim and spirit, to have the earmarks of leadership, and be inspiring—to do a ten thousand dollar a year job—on a thirty-five hundred dollar salary. This is a ridiculous situation.

"Teaching, to my mind, is a personal accomplishment; in this sense it is a profession. You and I cannot make rules; when this is attempted, the art of teaching is lost. I believe that one of the highest qualifications for teaching is devotion to the work; if one possesses this he will put such effort into his work that he will do a reasonably good job. You cannot drive nor force one to do good teaching.

"I think that within the past few years the quality of students entering our colleges of pharmacy is, in some instances, better than the teaching to which they are exposed. In my own experience, failures in classes are becoming fewer each term. This, I attribute, not to my ability, but to the care in selection of a higher type of student."
—Leslie B. Barrett, University of Connecticut.

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"My answer to this question is based upon frequent changes that we have made in teaching inorganic chemistry. The points that are enumerated are the changes we have made that have been tried and tested and found to be good.

"We use only teachers of professorial rank in our inorganic chemistry course because we feel that only such men are capable of teaching the introductory course.

"All teachers assisting me in this course (a total of four teachers for 130 students) attend both the lectures and the pre-laboratory instruction.

"All the teachers in this course are in the laboratory from the beginning to the end of the laboratory period.

"No student's question is answered by the worn-out expression 'look it up'.

"Every question is treated with respect; and if we are unable to answer the question, we help the student find it in the literature; or if this is impossible, and if it can be done, we help the student devise an experiment to get the right answer.

"No student leaves the laboratory without having his notes read carefully by an instructor. This takes much time; but by doing this, we find many errors that should be corrected on the spot. This is

better teaching than it is to let the student leave the laboratory with an erroneous concept that must be 'unlearned' later.

"All grades are based upon written work, all students getting the same questions.

"We give two written quizzes a week that are based upon the lectures, the textbook assignments, and the laboratory work. All recitation papers are corrected and returned to the student with an arithmetical grade.

"Rotation of the faculty both in the recitation sections and in the laboratory is made weekly. The students in the laboratory section are not the same ones that appear in the recitation section. In this way the students and the faculty learn to know each other more quickly.

"All term examinations and semester examinations are graded by the professor in charge of the course. These grades would be essentially the same no matter which one of the teachers in the course graded the examination papers; but we feel that this is a good way for the lecturer to find wherein he has failed in his instruction.

"Both the students and the faculty believe this is a very good way to teach inorganic chemistry."—Charles W. Bauer, Massachusetts College of Pharmacy.

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"I regret very much that I cannot go into details in an answer to this question, since until this year I have been continually on the alert to improve teaching methods, and if you recall, I reported before the Teachers of Pharmacy Conference last year an experience in teaching what we call 'New and Non-official Remedies'. I certainly believe that more time should be allowed for the Teachers Conference in order to have an exchange of ideas having to do with the improvement of teaching methods. We certainly need it more now than ever in view of the fact that we have to use instructors with only a Bachelor's degree."—Henry M. Burlage, University of Texas.

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"I believe the most significant development in my own methods is that of laboratory demonstrations as an adjunct to the regular laboratory work. I feel that demonstration is essential to proper laboratory teaching, especially in the more elementary courses. The value of visual aids of various sorts is now well established, and I consider demonstration to be essentially a visual aid. It is my hope to expand in this direction and to introduce other visual aids as soon as feasible."—E. L. Cataline, University of Michigan.

"I quite agree that there is some ground for worry insofar as lack of formal education training is concerned. It has always been my contention that the faculty members in schools of sciences are long on theory and frequently short on technic. I am not sure that that should be used as a basis for condemning those engaged in the teaching of sciences in our colleges, as it is generally conceded that those holding degrees in education are frequently highly trained in methods of teaching, with little or no attention paid to subject matter that they are intended to teach. Thus, it is possible under our present system to encounter individuals holding teaching certificates who are in no way qualified to teach the subjects of which they have charge, and also to find those who lack a teaching certificate who are well rounded in subject matter, and who are at the same time good teachers.

"With particular respect to the average staff members in the schools of pharmacy, it is contended that poor teaching methods or habits are the result of the system now used by the various institutions in obtaining and maintaining a faculty. That is, in my own experience with application blanks from many institutions, I have found an ample space provided for titles of research publications, but in no instance was any attempt made to determine the preferences, liking or ability for teaching. Further, after the individual has been hired on the basis of his research record, he is frequently required to maintain an active publication list, this in turn resulting in a heavy research program, frequently at the expense of effective teaching. To me, this system is fundamentally wrong and must be remedied before we can reach a firm foundation upon which to base teaching requirements.

"In my own case, I went directly from undergraduate work to a teaching position. Perhaps this was fortunate, because I had vivid recollections of ineffective and unsatisfactory teaching methods as practiced by many of my own instructors. Upon accepting appointment to the staff, it became my ambition to make myself the best possible teacher of the subject of which I was put in charge. This was done principally by copying the methods, approaches and presentations of those instructors whom I myself had felt to be most effective in teaching their courses to classes of which I was a part. In addition, I was sufficiently fortunate as to be associated with a staff at the time when an intensive study of examinations and examination procedures was being carried out. In the latter study, emphasis was laid on the fact that examination can and should be teaching tools and not clubs with which to force the students to memorize unrelated and irrelevant materials given by an instructor. It is believed that the combination of these two factors had much to do with raising the level of instruction in those courses of which I had charge."—George E. Crossen, Oregon State College.

"There is no question but what one of the weakest parts of our Ph.D. training is the lack of experience and instruction of the candidate in teaching methods and technics. A case in point is a recent Ph.D. graduate from this school who accepted a very fine position in a pharmacy school. This man did a very creditable piece of research, but has had no experience whatever in organizing a course or handling a class. He has been a laboratory assistant and has instructed individual students in laboratory procedures and technics, but he has never given what could be called a lecture before a class or handled a class of students in a discussion section. In talking over his plans in the new position, he has told me that one of the things he has most trepidation about is the problem of organizing the course and giving adequate instruction. Such an attitude is, of course, an excellent one because when a man realizes his short-comings he is very likely to give serious thought and study to ways of meeting them. The question is how we who are responsible for graduate training can give this experience to those who will ultimately go out into the teaching profession. Ideally this could be done by giving the man in the last year of his Ph.D. training, responsibility for a course. The difficulty here is that the students would not like this because they feel they have the right to an experienced faculty member as a teacher. Neither would administrators like this and in fact the A.A.C.P. might object to it on the grounds that the school was not meeting its obligations to its students. There would also be the criticism that the school was attempting to save money by putting such individuals into responsible teaching positions. Before the war, I met this problem among our graduate students at least partially, by means of weekly meetings of a Journal-Seminar group. All the graduate students were required to attend. At each meeting one of the graduate students presented a paper. This paper might be a report of research progress, if his research had reached the point where such a report could be made; or, more generally, it was a report of the material which he had prepared from reading Journals and monographs. After such a presentation I always made it a point to discuss with the student not only the organization of the material which he presented but the technics of presentation. On this occasion I brought out things which represented both bad and good technics and in many cases used actual faculty members which we both knew as examples. On the basis of this I have considered for a long time the possibility of writing a short paper in a lighter vein discussing the problems of presentation of lectures and class discussions. This I was going to put into the hands of all graduate students before they came to give their presentation at the Journal-Seminar meetings.

"While I agree with Dr. Elliott's statement that taking courses in education does not necessarily result in making a good teacher, I think this is a little harsh on the College of Education. While they

may fail in many cases, as indeed we all may, they are the only group which are making a sustained study of teaching technics and problems, and they deserve much credit for this rather than our glib dismissal of their work in the statement such as you quote from Dr. Elliott.

"The only thing that will improve one's teaching is for the instructor to sit down for a couple of hours and indulge in introspection regarding his own teaching. He can observe as much teaching as he wishes on his own campus by visiting other instructor's classes and analyzing the good and bad points. Remember that he is not presumably making a visitation to acquire new knowledge in his field but to learn teaching technics, and certainly in a school of any size he can make abundant observations of teaching technics on his own campus. Also, how can a lecturer coming to a school for a couple of days do very much to improve teaching in that school? If he sits in on lectures, obviously the instructor is going to be on his good behavior during the time of the visit. Furthermore, no instructor wants to be judged on such a small sampling of his teaching. A course can be judged only from a perspective which develops from observation of the entire course.

"Our Department of Psychology has developed a program which is designed for the benefit of the instructor in analyzing his teaching. It has nothing to do with any administration evaluation of a teacher. Any instructor may ask that this survey be made and the results are turned over to the instructor for his perusal. Such a survey is based on the assumption that a student is in a position to know what the bad technics, or conversely the good technics of the teacher might be. Therefore as a specific project to lay before the Problems and Plans Committee, could I suggest that material be prepared and furnished to any pharmacy teacher which he could use as a method of finding his teaching effectiveness from his students."—J. M. Dille, University of Washington.

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"Any improvement which I have made in my teaching methods has been largely the result of experience. From time to time, I have varied methods of presentation and organization of the material when it was obvious that certain points were not made clear to the student."—Melvin F. W. Dunker, Wayne University.

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"Although I have been teaching for about ten years, I must confess that my thinking concerning problems in teaching has been quite limited. Accordingly, my thoughts on the subject of teaching technics, etc., are probably one sided and reflect the prejudices that

frequently accompany limited thought. My own experiences as a student have led me to the belief that a good teacher is one who has a sound, comprehensive picture of his subject. By 'comprehensive picture' I mean an understanding of the subject that permits the possessor to see the whole forest even though some of the trees may not stand out distinctly. This point of view colors what I have to say relative to your several questions.

"For the past ten years (my total experience as a teacher) I have used charts, lantern slides and an occasional film as aids in the teaching of biochemistry. However, it is my impression that any improvement that may have been noted in my teaching is due, not so much to the use of these aids, as to the fact that the past several years have added greatly to my understanding in the field of biochemistry. One objective piece of evidence in favor of this point of view is that each time I present the beginning course in biochemistry I find more interest among the group known as the C student. The A student can survive under conditions of poor teaching; not so the C student.

"There is an aspect of my teaching, properly classified under the head of methodology, which strikes me as being quite primitive. I refer to the custom of students coming to the lecture room with the problem of translating my speech into notes. It would seem much more efficient and profitable if they were to become fortified with a lecture syllabus and with the knowledge they would have to take down only an occasional remark, or at most, revamp the thoughts in a paragraph or two. I hope that the coming year sees the students in possession of such a syllabus."—John J. Eiler, University of California.

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"Frankly, I do not know if I have improved my methods although this question continually bothers me. I doubt if there is anyone who changes his methods more than I and I think that I have been able to get some of my course work over to the students in a better fashion than I would formerly, but I have no proof of this. I expect most of my ideas on teaching methods come from asking other teachers how they do their work. I believe that I get more value out of talking with individual instructors concerning problems of teaching than I do when I sit in the teachers' conferences. I have had a feeling in attending these teaching conferences that everyone is concerned primarily with exalting his own methods rather than listening to what someone else might have to offer."—Earl P. Guth, Ohio State University.

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"I will apply my comments to a course in Theoretical Pharmacy for freshmen and to the Pharmaceutical Laboratory, given in the second

year. I feel that Theoretical Pharmacy is an extremely important basic course through which familiarity with terminology and pharmaceutical procedures is obtained. Consequently, an attempt is made to set forth vivid illustrations for all points in question and invite discussion from the class to clarify any doubt that the point has been made clear. I like to present each point or phase of the course in such manner that the student retains the information by basic reasoning rather than through memory alone. As a result, I find that a constant revision process is necessary in order that a proper linking of the purely theoretical and the practical applications is attained.

"A large percentage of the products prepared by students in the Pharmaceutical Laboratory are used in the University Hospitals. This fact is made known to the class along with a clear conception of what responsibilities befall one who prepares medications for patient consumption. I try to impress upon each individual that each product is in truth a prescription and must command every precaution and consideration applicable to it. Each student is required to prepare a work sheet for each preparation on which each quality weighed or measured is checked by an instructor. During the laboratory periods, the two assistants and I also discuss procedures and products with the students in an attempt to fix proper technic and pertinent facts in regard to products in the students' minds. In short, in all of my classes I attempt to stimulate three things, (a) association of theoretical and applied information, (b) free discussion and (c) that every student must feel free to visit my office whenever I may be able to assist with a problem."—James W. Jones, State University of Iowa.

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"It seems to me that the most successful efforts I have made lie in the establishment of a close student-teacher relationship by which I encourage the students to tell me the things which have not been made as clear as they should be. I take pains to have the students communicate their feelings in regard to lectures, quizzes, course content, etc. If I cannot agree with their viewpoints, I try to explain why. The sine qua non for success with this method is a friendly attitude of helpfulness on the part of the teacher, and an ability to take criticism. From time to time, I have tried various other devices, and still use some, but all of them together are less useful than the close rapport that is mentioned above."—K. L. Kaufman, Medical College of Virginia.

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"I believe a good many of us have experienced the same thoughts which the young man you speak of has expressed to you. Many of

us have thought we should be taking some courses in the College of Education along with our graduate course work and research. We talked about it, but it seemed our activities never allowed time to fulfill our desires in those courses. After my graduate training was completed and it appeared as though I could take the time for such courses, one of my colleagues pointed out it was a waste of time to enroll in such courses,—that anyone could gain what he needed merely by reading the proper textbooks. I still believe such course work is valuable. Those in the College of Education have made a study of teaching methods and it is their business to teach others the methods of good teaching. They are the only group of people who have made such studies and are capable of giving detailed instruction along such lines. Perhaps we will all agree with Dr. Elliott that taking such courses in education will not necessarily make good teachers. We will also have to admit that good instruction in the various courses of pharmacy will fail to make good pharmacists out of some individuals. By the same token some failures can and do result in all branches of specialization.

"When I look back on my graduate training I recall a number of things I was asked to do which serve to improve ones teaching. I only wish more of some of those things had been required. A Journal Club of Chemistry, Physics and Pharmacy met each week. Faculty members took turns reporting on their research and occasionally we graduate students were asked to contribute something pertaining to our research, if it had advanced far enough, or something from current Journals. Preparing the report and giving it was good education. Questions concerning the report which followed our reports certainly tested our ability to think on our feet. True, our first reports were badly given (at least mine were) but the staffs were patient,—we had other chances to improve our presentations.

"My Dean was helpful in giving me all the aid possible in my classes. He stayed away from the classes or he attended them as he was requested,—and always was willing to give constructive criticism of teaching methods employed.

"Another thought concerning the Journal Club: we are organizing such a Seminar Group in the College of Pharmacy and may combine our efforts with those of the Pharmacology Department. Staff members, teaching assistants, and graduate students will serve their turns in giving reports on their own research or some current subject matter. This Seminar is being organized primarily to benefit our people who intend to enter the teaching field. However, it will benefit those who go into research also because a research man must always be prepared to report on his work.

"A graduate student is now working with me who definitely intends to enter the field of teaching practical pharmacy courses. He has asked to gain teaching experience by taking over occasional lectures. I see no reason why the plan should not be followed. The student requests plenty of time to prepare his lecture and goes over the material with me before class time. I started him on the plan by giving him occasionally one of the laboratory discussion periods. The laboratory is divided into three sections so you can see how the plan should function properly. He asks that I attend his lectures, and I agree that I should do so and offer criticisms of them.

"Our Psychology Department has devised a program whereby an instructor may have a survey taken in his classes. The survey is a student poll concerning the teacher and his methods. The results are sent to the teacher. Comment in these reports are sometimes enough to give an instructor food for several hours thought, and I believe one can improve his teaching thereby. One thing I wish the Psychology Department would add to this service is to send such survey questions to graduates who have taken the course. Graduates are often in a better position than are the current students to judge the value of a course."—Elmer H. Plein, University of Washington.

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"An important factor in improvement of instruction is the proper selection of teachers. When it comes to selecting teachers I sometimes think that the genius or near genius has less chance of success with the usual type student than some of the rest of us. Recently I heard a Nobel Prize winner in the scientific field deliver a lecture. I felt embarrassed for him. He would look at a diagram on the screen, walk around in a circle once or twice, look at the diagram once or twice more and then start to tell us about it in a voice that was scarcely audible twenty feet away at times. That man is a first-class scientist, but he is no teacher, at least as far as the undergraduate level is concerned. Another thing to be said for the non-genius teacher is that he knows how to study, for he had to study to get where he is. He is thus in a position to appreciate and understand the learning problem of the ordinary undergraduate student.

"While I agree with Dr. Elliott that taking courses in education does not necessarily result in making a good teacher, we must recognize that there is a scientific approach to the learning (and teaching) process. The armed services demonstrated to us how much more efficient the learning process can be than many of the orthodox college methods are and still many college courses continue to be taught by inefficient processes. I am convinced that pharmaceutical instructors as a group as well as many other college instructors are offenders of inefficiency in instruction. Part of this blame has to be placed with deans

unsympathetic to the expenditure of a few hundred dollars for even audio-visual aids. I still think that my suggestions in the *Journal* of several years ago to establish some kind of a committee or agency to promote and correlate aids for instruction in the various phases of pharmacy would be one of the most worthwhile projects we could undertake.

"Good salaries do not necessarily make good teachers. It has been said that probably many teachers (and preachers) are now overpaid as far as the service they render is concerned. It is true, of course, that money should go to a good teacher to allow him a decent living, but does not, is money wasted, for no one can teach properly when under a financial burden.

"As a person continues to teach the temptation comes to make less work for himself. Why read up on the latest information on a subject before lecturing on it when I already know more about it than the allotted time will permit me to discuss? Why get out displays and other illustrative material for the lecture when I have chalk and a blackboard, and so on. The problem then is not only how do I improve my teaching methods but how do I keep my teaching from deteriorating? I try to improve my teaching methods by: (1) maintaining and increasing my interest and enthusiasm for the profession of pharmacy and for the particular subjects that I teach; (2) increasing my interest and appreciation of fields of pharmacy other than my major and minor fields, by attending meetings, collecting source material, writing, and requesting courses to teach in these other fields; (3) at all times teaching to the best of my ability, resisting the temptation to the easy method if I am convinced that is less efficient, and so far as I know, it always is."—Kenneth Redman, University of Georgia.

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"I have tried a number of methods in order to improve my teaching. Before the war I followed mainly the formal lecture system, but permitted questions during the lectures. During the war when the classes were small, I was able to try out an experiment with the informal discussion type of presentation. This form is often considered to be the most effective and the best type. I was not completely satisfied with it, but I believe it is better than the lecture system.

"Now that classes are large once again, I find it is not possible to continue this type of procedure, so I have tried to combine the more formal lecture presentation with discussion. By that I mean that I lecture and quiz and have the students ask questions all during the period. But this method is not entirely satisfactory, although I believe it is better than the formal lecture.

"I am still experimenting and probably will be as long as I continue to teach. I am not at all certain in my own mind that my teaching today is as good as it was a few years ago, before the war. The lack of much new information in journals concerning dispensing pharmacy and other pharmacy courses is somewhat of a handicap in the teaching of pharmacy. It seems to me that I have to rely too much on books for my source of information and often the information in the books is not up to date or is inadequate for proper presentation."
—Tom D. Rowe, Rutgers University.

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"The development of whatever adequacy I have acquired as a teacher may be attributed to three separate factors, each of which contributed in its own way to the pattern which I now follow:

"(a) Copying the best methods of my own professors. For example, it was once my great privilege to take a course in biochemistry under an outstanding professor who has since become chancellor of one of our great state universities. This man was probably the most inspirational and effective teacher I have ever known. By studying carefully his method of approach and his techniques and adapting them to my own courses, I believe that I have become a more effective teacher. From another professor I learned the importance of independent work (work in which only sketchy instructions are given so that the student must learn to improvise his own method of attack). Much of this can be applied in courses at the senior and the junior college level. Still another professor demonstrated the importance of a well-planned program, and a fourth the value of reading assignments from sources other than the regular text. All of these suggestions have been put into practice in the courses which I have taught, and have been found to be of value.

"(b) Advanced study in fields related to my own but not a part of it. For example, the study of physical chemistry contributed a better understanding of colloids, emulsions, eutectic mixtures, isotonic solutions, pH, and many other topics. It is positively amazing to discover how many fundamental principles of science can be applied to pharmaceutical problems if one is only familiar with those principles. The study of Organic Syntheses and Organic Analysis have been of immeasurable assistance in the comprehension of much of the information concerning organic pharmaceuticals and in the understanding of official analytical procedures, incompatibilities, etc. The values of studies in Immunology and Pathogenic Bacteriology is obvious.

"Many are inclined to discount the value of elective courses in the undergraduate program on the basis that the material studied

will not be related to pharmacy. In the same way, we are inclined to narrow a graduate program to a degree which may be unwarranted. While it is perfectly obvious that we can go so far afield as to find almost nothing which would be applicable to pharmacy, it is also true that pharmaceutical education could be vastly improved by the recognition of concepts and fundamentals which may be gleaned from fields of study which upon superficial examination seem to be unrelated to pharmacy.

"(c) The use of textbooks of education. Dr. Elliott was certainly correct in stating that courses in education do not make a good teacher. On the other hand, courses in education can do much to improve the teaching methods of any promising aspirant. It has never been my good fortune to obtain credit in a formal course in education; however, my good wife (who spent some years in preparing to become an elementary school teacher) was helpful in filling some of the gaps, and I have learned much from others who have taken such courses. Much has been learned (particularly concerning the art of writing examinations) by consulting textbooks in education and publications in the field of education. Since I have consistently believed that any course is learned primarily by one's own self, with the instructor supplying the assistance and the leadership, it would be an anomaly if I did not believe that some value has been received from these methods of self instruction."—Joseph B. Sprowls, University of Buffalo.

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"It is difficult to answer this question concerning improvement of teaching methods since radical changes ordinarily do not occur, although constant small changes do occur and the results of the experiment which may be undertaken by some new technic may not be apparent and the instructor may lose sight of the improvement that actually has taken place .

"In my experience I have found that too many examinations can be harmful. One way that they can be harmful is that they cut into the amount of material that can be covered in a teaching period, and another is that examinations primarily should be for the correlation of material. If they are given too frequently, I think they lose their purpose. I am not suggesting though that too limited a number of examinations be given. In a regular quarter I feel that a minimum of three or four should be given so that some yardstick may be used for determining the final grade.

"One method that could greatly improve teaching would be the greater use of visual aids. By the use of these aids the subject matter is brought home more graphically and vividly to the students. We

have attempted to make use of them from time to time, but I would some day like to see greater use made of visual aids. I realize that they are expensive, but by the gradual building up of the library, these aids can materially assist in the presentation of the course.

"Another device that I have used from time to time is to conduct impromptu discussion periods. Many students have commented that such discussion periods are means by which they may more thoroughly fix a subject matter in mind. There are a few, however, who object because they feel that they are not competent to speak up in a group. I indicate to them that this is one way of treating them so that they can meet such situations."—C. H. Waldon, Montana State University.

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"What improvement I have been able to make in my own teaching methods has been achieved only by self-examination and introspection plus and evaluation and recollection of my own experience as a student and the reactions I had at that time. I have not made the systematic approach to a careful analysis of my teaching methods that I should have done."—Allen I. White, The State College of Washington.

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"In general when an individual completes his training for the Ph.D. degree among his first ambitions is to begin a program in industry or education (depending upon which of these two fields is selected) wherein he can apply that which he has learned. During the usual run of minor or supportive courses and the major course the degree candidate has been exposed to a tremendous amount of information and literature some of which is not directly useable at the time, but the bulk of which is a marvelous reservoir from which the person can draw indefinitely. It seems to me that during these times in pharmaceutical education when teachers in pharmacy are confronted with the task of making their courses more in keeping with the allied courses given in other departments in a university the teacher should strive to select that material from his graduate training which can be brought down to an undergraduate level and incorporated into the pharmaceutical course to which he has been assigned. This should be at the expense of heretofore stereotype material which has through the ages become classic and less in practical need. Now as soon as the teacher does this and as soon as he attempts to present some of the subject matter from an allied course the cry of "stealing" is heard. Unfortunately those who would accuse fail to comprehend that knowledge is limitless and that the interests that can be aroused in the teaching of a subject can be from different lines of attack. The ultimate goal of having students in pharmacy learn that drugs and materials of pharmacy have certain individual properties and

processes could be achieved without the retail pharmacist being given the advantage of equalling his fellow public health colleague in scope of cultural and scientific learning. But what modern pharmacist would have his bachelor degree exchanged for the concept of a trade certificate? Likewise the divisions of pharmacy, namely, pharmaceutical chemistry, pharmacy, pharmacology, and pharmacognosy could be taught with boundaries without utilizing each other or allied subjects to the fullest extent. But how could a broadly trained teacher, especially one who has an interest in many of these fields, stay within a specified lane? How can any one department in a medical school refrain from teaching material that might be included in other departments? How can ever research or research thinking be carried out without using several fields for reference or experimentation? I do not mean that the pharmaceutical teacher should attempt to become a 'jack of all trades and a master of none'. But I do mean that he should not refrain from using material of either allied fields or even of divisions from within the pharmacy departments if he has a contribution to make by so doing. Basically perhaps each division of the pharmaceutical curriculum has an emphasis peculiar to it. For example, the basic emphasis in pharmacognosy and pharmacology deals with having the student learn relationships of drug properties to certain principles of living organisms. The pharmaceutical chemist can not close his eyes to living organisms any more than the biologist can close his eyes to the structural formula of a chemical substance.

"Therefore new and older teachers should cast aside the thought that in so far as John Jones is teaching pharmaceutical chemistry, teacher A should not discuss chemistry to his pharmacognosy class in order to arouse a thought. If he would attempt to correlate some of the material from several of his allied interests into his teaching I believe that the student would benefit and that the course would be kept up to current needs. There would be overlapping but not repetition. We see a star in the heavens. . But each one might have a different version of that star.

"Now that I would have the teacher make use of other fields for revising his courses I would with as much emphasis use the references and visual aids as freely as possible to drive home the point. I am firmly convinced that minds cannot be regimented and therefore a biologist would present a portion of a subject from perhaps a different point of view (not necessarily better)) than a more physical scientist. In my opinion if we do not recognize the breaking down of boundaries between the curriculum divisions in pharmacy we shall continue to have a large number of specialized courses. This will necessarily make it impossible for the curriculum to include more cultural courses selected from the humanities, for example. It would seem more appropriate for the undergraduate courses to be made

general as far as possible and for each to the augmented by *elective* specialized courses or reserve such for a graduate program. After all we are training bachelor degree candidates in pharmacy and not specialists in pharmacy. The graduate school or the pharmaceutical enterprise to which the student goes will make a "specialist" of him."
—Heber W. Youngken, Jr., University of Washington.

Several members of the committee expressed dissatisfaction over the conduct of the Teachers' Conferences. The feeling is that they do not measure up to the objectives for which they were established. This problem is intimately associated, of course, with those stated in question number 1. To clarify the problem, question number 2 was submitted.
Question No. 2.—Have you any suggestions as to how the Teachers' Conferences can be conducted so as to make them have greater teaching value?

Replies:

"I do believe that meetings, such as the Teachers Conference, are excellent places to exchange ideas. During such meetings methods of teaching might be presented and a liberal time allowed for discussion. For my part, I have always come away from the national meetings inspired, if for no other reason than the contacts made. One can get a great many good ideas just by talking to the other fellow, and this is something that is gained through going to meetings."—Leslie B. Barrettt.

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"The conferences should devote some time to the problem of teaching students how to apply the factual knowledge they have gained in chemistry to the various problems of pharmacy and its allied subjects."—Charles W. Bauer.

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"Ascertain the names of teachers who are doing good teaching (by asking deans, etc.) and then enlist them to give discussions of their techniques at the conferences. I am satisfied that the present conferences are helpful. Perhaps they need a more definite direction toward teaching method techniques."—C. A. Brecht.

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"I believe that more time should be allowed at the Teachers Conference, and that personnel who are responsible for the programs should ask for copies of papers to be presented and have these copies sent to a selected few who would be willing to discuss them from the floor or raise questions about them. This scheme used to be followed at some Teachers

Conferences, and I believe proved quite successful. Unless this is done, it often happens that a person goes to considerable trouble to prepare a paper, and then gets no discussion about its contents, and this often gives one a feeling of futility."—Henry M. Burlage.

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"It seems to me that the Conference of Teachers should encourage the presentation of papers on and discussion of teaching methods. There appear to have been in the past many papers and discussions on course arrangement and content, but very little has dealt with actual methods of instruction. As indicated in the answer to Question 1, I feel that this is an extremely important subject. Personally, I would like to know of the methods which others have found effective."—E. L. Cataline.

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"With regard to proposed seminars of teachers, it was the consensus of this staff that too much of the allotted time was devoted to a consideration of course material and too little to a study of effective teaching methods. On this basis, this school refused to participate in the seminars. At the time of our discussions relative to this matter, it was suggested that conferences of teachers of the A. A. C. P. might well contribute materially to effective teaching by arranging one joint session of all of the various conferences which would be devoted to a consideration of improved teaching technics. This proposal was made in the full knowledge that the subject matter of the various courses would differ, but was in the contention that effective presentation methods could be applied equally well to any subject matter, whether it be in the department of pharmacy, pharmacognosy, pharmaceutical chemistry, or any other. This opinion is passed on to you as a suggestion for a possible improvement of the program of the various conferences."—George E. Crossen.

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"Of course, I am very much in favor of even more time to the 'Conferences of Teachers'. Most of such programs are given over to the exchange of ideas by experienced teachers, but I think that at least one paper occasionally might be devoted to the problem of how to train graduate students to be good teachers."—J. M. Dille.

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"Regarding the conduction of the teachers' conferences leaves me a complete blank. I have no suggestions on how they may be improved as long as they are going to be jammed into narrow time limits. At the Pittsburgh meeting, Dr. Burlage presented an idea to me concerning this matter that I believe has merit: he wanted to establish a meeting similar to those held by the Plant Science Seminar. We discuss-

sed the possibility of such a seminar, but decided it would be impossible to establish them without financial backing. Perhaps this is when the idea of the seminars that Dr. Elliott wants to establish got started.

"I think the Association would do well to devote more time to the teachers' conferences at the annual convention. I know that under the present plans this is almost impossible since the convention week is completely filled with meetings of all kinds. As a matter of fact, the annual convention is so crammed with meetings that many people are losing interest in attending them. The solution would seem to be a separate meeting time for the Association. Just how this could be worked out is another matter, but the short time now devoted to teachers' conferences and the lack of recreational time during the week of the convention makes it impossible for those of us who like to exchange our ideas to do so.—E. P. Guth.

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"It might add to the interest and value of such conferences to use the first period for a presentation of reasonably brief papers on teaching processes followed by a period of round table discussion under the direction of a good moderator. I believe many good ideas would be presented from the floor which do not come to attention in periods completely filled with paper presentations."—James W. Jones.

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"So far as Teachers' Conferences are concerned, I confess to a lack of appreciation of their usefulness. If ever I heard a noteworthy idea which was new and/or different, the incident escapes me. The scheduled speakers nearly always seem too anxious to impress their listeners by sheer volume of material. Too little cerebration appears to be given to the basic philosophy behind their premises. They have assumed that the ideas with which they were indoctrinated ten, twenty or more years ago are fundamentally sound.

"It is my hope that some year we will have a program at a Teachers' Conference in which an attempt will be made to examine the fundamental philosophies referred to above, instead of assuming their inherent correctness. Perhaps The Survey report will raise such questions in a manner that the teachers cannot ignore.

"My personal preference under the present circumstances is to spend an hour with one or two others in a quiet discussion instead of going to the Conferences. Brief visits to other institutions are also helpful."—K. L. Kaufman.

"I am in agreement that more time should be devoted to the Conference of Teachers. Exchange of ideas in these meetings is valuable. I wish we could find some means of having more of our graduate students

in attendance at these meetings so they might profit from these discussions. Maybe we should make more effort to convey the fruits of those discussions to our students."—Elmer M. Plein.

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"Teachers are a conceited group (myself included). They may listen to a discussion in a conference on say, teaching methods, but I doubt if many of them follow the suggestions—each thinks his set method is best. Another thing that detracts from the teachers' conferences is the 'three ring circus' effect. It may be that the history section will solve this problem by the separate meeting in Madison this summer. I believe the conferences should receive more study before recommendations can be made."—Kenneth Redman.

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"At the present I have no suggestions as to how to conduct the Teachers' Conferences."—Tom D. Rowe.

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"The Teachers' Conferences might be used to good advantage for the topic just discussed—improvement of teaching—by asking each contributor to describe the methods which they have found to be most effective in the presentation of selected subject matter, or in the teaching of certain technics in the laboratory.

"May I also propose as a worthy endeavor of the teachers conferences the preparation of standard comprehensive examinations for some of the more fundamental pharmacy courses. Whether this has ever been done, I do not know; but I do know that it would be of great value to me if I had some method by which the general achievement of my students could be compared with that demonstrated by other groups or by a standard group."—Joseph B. Sprowls.

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"Another way of improving the teachers conference, I believe, would be to present complete and concise methods for presenting specific material. I realize that some may be hesitating in doing such a thing, but I believe that everybody would be benefitted, even if it is only to show that the method is not all that it should be. I believe the number of presentations at the teachers conferences should be kept at a minimum so that interest may be maintained and discussion periods may be more prolonged, and by that means a better insight into the teaching methods used can be gained."—C. H. Waldon.

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"If the teachers conferences are to provide help in the art of teaching methods, then first of all, more time will have to be allotted

to the presentation of this problem. In my experience, much of the material presented before teachers conferences is of a curriculum or course-content nature and very little if any material on teaching methods. If teaching methods were to become a vital part of the conference programs, then it would be important to have recognized authorities on this subject initiate the program to be read to the group in the usual manner."—Allen I. White.

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"It would be a decided advantage to devote more time to the exchange of ideas during the scheduled meetings of the Conference of Teachers. I would suggest that shorter papers be presented, limit the paper to ten minutes, and give each paper more time for discussion, as much as twenty minutes. It would seem that several streamlined papers with sound ideas for teaching technics augmented by thoughts that would create lively discussion would be an improvement over a lengthy discussion by one man and presented in a single paper.—Heber W. Youngken, Jr.

One committee member is hopeful that the summer seminar contemplated by The Pharmaceutical Survey will result in teaching improvement. He, however, is of the opinion that greater good would be gained by using this money to permit instructors to visit other institutions for a few days and obtain first-hand knowledge.

Question No. 3—Will you express an opinion on this?

Replies:

"I do believe that meetings such as the Teachers Conferences, are excellent places to exchange ideas. During such meetings methods of teaching might be presented and a liberal time allowed for discussion. For my part, I have always come away from the national meetings inspired, if for no other reason than the contacts made. One can get a great many good ideas just by talking to the other fellow, and this is something that is gained through going to meetings."—Leslie B. Barrett.

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"Summer seminars for teachers are certainly worthwhile. However, I should like to see more good teachers in action teaching students than to hear them telling us how to teach. We all have golden opportunities in our own schools for dropping in on a teacher unannounced, and hearing a really good teacher in action. Teaching students, and

teaching teachers how to teach, are two different things. I believe we have already been over-exposed to the latter and under-exposed to the former method of teaching."—Charles W. Bauer.

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"Both ideas are good, but, unfortunately, suffer from certain handicaps, chiefly financial."—E. A. Brecht.

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"I am rather skeptical about the value of the summer seminars. They might be of help, but the program and the speakers should be selected with great care, and should not only include teachers in the respective pharmaceutical fields, but also teachers in the laboratory sciences and other fields, in order that we might get an exchange of ideas. I am afraid it is going to be difficult to get money from the respective universities in order to defray the expenses of individuals to take the seminars."—Henry M. Burlage.

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"I believe that the summer seminars would be more productive of improvement in teaching than the visits of instructors to other institutions. First, it would be possible for each instructor to glean information from a number of other instructors in the same field. This would not be true in case the instructor visited a single institution. Secondly, it would appear to be a less expensive proposal to hold the seminars than to have even one instructor from each institution participate in the visiting plan."—E. L. Cataline.

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"It is not believed that anything of material value would be obtained by permitting instructors to visit other institutions. Should instructors have a desire to observe sound teaching methods, there are undoubtedly available to them many good instructors on their own campus and auditing and observance of these more effective individuals would undoubtedly serve to raise the level of the instruction imparted by the members of the pharmacy staff. It is my belief that the proposed seminars could be of immeasurable value if they are conducted as outlined under Number 2."—George E. Crossen.

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"I can see no point in allocating money to permit instructors to visit other institutions for a few days. Such a visitation would, of course, be beneficial in many ways but if the teacher is really interested in improving his teaching technique, travel will not do this."—J. M. Dille.

"I do not feel that the short summer seminars contemplated could possibly improve materially the backgrounds of weak instructors who have, however, been teaching 20 or more years. In general, I do not consider the summer seminars of much value, unless I entirely misunderstood the initial letter of Dr. Elliott pertaining to them. Short seminars can definitely add to an individual's background but they can by no means substitute for it."—Melvin F. M. Dunker.

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"Without knowing more about the summer seminars, I tend to favor the suggestion that more can be gained by short term visits to other institutions."—John J. Eiler.

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"I believe I was the one that suggested that teachers travel to other institutions to study teaching methods in order to improve their own teaching. I still think that this has more practical benefit than any group meeting. I am sure that I have gained by such visits and another of our instructors has also profited in the same manner."—Earl P. Guth.

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"I subscribe to the thought of an interchange of visits by instructors during the school year for the purpose of observing teaching methods employed. However, it seems that a broad exchange of teaching ideas during the annual convention would be a prerequisite to the planning of such visitations by each instructor in order that he derive the most benefit from his visits."—James W. Jones.

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"I fail to see a great deal of benefit to be derived from the summer seminars per se. The social contacts might lead to some worthwhile discussions after regular hours. For myself, I would prefer to have the College finance my study of special courses in which I need more preparation."—K. L. Kaufman.

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"I would not agree that money should be allocated to permit instructors to visit other schools to observe teaching methods for a few days. The instructors should already be well-versed in the subject matter of pharmacy and only the actual methods of teaching should be their observations. Such observations can be obtained at their own schools by attending classes in related courses and in some unrelated courses."—Elmer M. Plein.

"I favor the summer seminars."—Kenneth Redman.

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"I was sorry that the contemplated summer seminar for this year was cancelled and hope that it will be carried out in 1949. I *hope* these conferences will result in teaching improvement. However, there is one danger, and that is in the selection of the individuals to present the material. I am not certain that we have in the departments of pharmacy throughout the country enough excellent teachers to put on the seminar in the proper manner. We have some good teachers and a number of mediocre ones, but none of the individuals in these categories could do the job that is required if the seminar is to be successful. This lack of outstanding teachers is one reason why I think it would be of little value to have instructors visit other institutions. I think they might pick up some methods and practices that are being used in the various colleges in their areas, but I doubt if they would get enough to make their trips worthwhile."—Tom D. Rowe.

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"I am of the opinion that the summer seminars will be of great value provided that two principles are established:

(a) That young instructors who are in need of experience and assistance be permitted—yes, even encouraged by seeing that expenses are subsidized by their institutions—to attend. Too often have we seen the conference and convention halls filled with the faces of those who are no longer in a position to need guidance—or to accept it if it is offered, while the young members of the faculty stay at home tending to the work of their departments or working hard at the summer job in order to be able to finance the expensive hobby of teaching school .

(b) The lectures must be devoted to improvement of teaching—not to the presentation of material which is some professor's particular hobby. Any "bright" graduate student can soon collect enough factual material to fill a year's lecture hours. What one cannot find in the literature is best methods of presenting pharmacy material, methods of conducting pharmacy laboratory classes, methods of teaching accuracy and of instilling confidence in one's work, methods of preparing theoretical and practical examinations for pharmacy students which reveal the extent to which he has achieved the necessary objectives."—Joseph B. Sprowls.

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"I am in agreement with the committee member who is hopeful that the summer seminars contemplated by The Survey, will result in better

teaching. I think these seminars could be made into very useful periods. Whether or not the summer seminars would prove better than visitations by instructors, I am not sure. I can recall sitting in on lectures at other institutions and having gained something from these visitations. I am afraid it would be quite difficult to get a university to finance such visitations. It would be necessary if instructors should visit other institutions to stay an appreciable length of time so that we would not draw conclusions from a single lecture or only two or three."—C. H. Weldon.

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"I doubt that money spent on visits of a few days at other institutions would be as beneficial as summer seminars and work shops."—Allen I. White.

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"Instructors, no matter how sincere and ambitious they might be, could not obtain in a matter of a few days enough information to make this suggestion worthwhile. Summer seminars would probably be a display of the workings of a division or department in pharmacy as viewed in a show case window. These seminars are excellent for obtaining ideas and knowledge for research but for teaching purposes I don't believe that they would be adequate enough to serve a worthwhile purpose. Teaching improvement, it seems to me, comes with actual practice. Actual practice involves presenting material over a long period of time to students. It also involves obtaining a reaction from these students as to whether they are interested or not or are obtaining desired results from the instructor's presentation. This can't be done in a mere few days unless a student reaction can be observed."—Heber W. Youngken, Jr.

Question No. 4 arose from a suggestion that the money now allotted by the American Foundation for Pharmaceutical Education for the purpose of making lectureship tours might be productive of better teaching if the subject matter of these lectures should be limited to "The Improvement of Teaching."

Question No. 4.—Do you agree with this view?

Replies:

"The subject matter is not too important. The ability to be convincing and interesting is the vital thing. I recall that at one time I attended a lecture on "How to Make Your Subject Interesting," and that I was put to sleep in about ten minutes. I am afraid that the uninteresting subject of *how to teach* would put most of the audience to

sleep. Let's hope that the men who are to be sent out by the American Foundation for Pharmaceutical Education will have an interesting message that they will give in a convincing manner."—Charles W. Bauer.

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"No, this limitation might exclude valuable material."—E. A. Brecht.

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"My feeling is that funds allotted by the American Foundation for Pharmaceutical Education for lectureship tours should not all be used for lectures on *improvement of teaching* but some of it might well be allotted for this purpose. Our students need very much the stimulation of outside speakers of outstanding name in order to give them a broader concept of what pharmacy is."—Henry M. Burlage.

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"Possibly, but I believe it would be impracticable to confine the subject of the lectures to the improvement of teaching. It is likely that only the staff and some graduate students would be sufficiently interested in the improvement of teaching to attend such lectures. Generally this would constitute a relatively small group and would provide little inspiration in the way of an audience to a lecturer."—E. M. Catline.

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"As a member of the committee responsible for re-establishing the professorial lectureship tours sponsored by the Foundation, I would call attention to the fact that these lectures were not established for the purpose of improving teaching technics, but were set up rather for the benefit of the undergraduate student who might thus have opportunity of seeing and hearing outstanding individuals in the field who might otherwise not have opportunity of appearing before the various student bodies."—George E. Crosson.

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"It would depend somewhat on who presented the lectures. If the individuals presenting the lectures were well-grounded in the formal principles of educational methods and at the same time were familiar with the field of pharmacy, then probably improvements in teaching would result. Do we have such people in the ranks of pharmaceutical educators? Among my limited acquaintances are only those who, having completed graduate study in one of the few pharmacy colleges offering such work, have for one reason or another chosen to remain attached to an academic institution. They may have had a little prior experience as an assistant during graduate work, but are lacking in courses on educational methods."—Melvin F. W. Dunker.

"Personally, and in conformity with my prejudices, I favor the thesis that money will be spent to better advantage if the lecturers concerned themselves with the subject matter and not with the presentation of subject matter."—John J. Eiler.

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"I do not see how lectureship tours as such would improve teaching methods. The biggest values that we would obtain from these tours would be broadening our horizons and I can see no relationship of more knowledge to better teaching methods. I am in favor of these lectureship tours nevertheless."—Earl P. Guth.

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"The suggestion in the question has very good merit, since we are primarily concerned with improving on the type of individual we offer to society. It might also be suggested that the visiting lecturer be given ample time to study the content of a course and observe the method of presentation in the institution visited, after which he would prepare and forward to the instructor what he considered constructive ideas on how the course could be improved. Naturally the course criticized would be one taught by the visitor in his own institution."—James W. Jones.

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"No. This would be unduly expensive, since fewer people could benefit from a given amount of travel. It would also have the same objections which I have raised in Number One above."—K. L. Kaufman.

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"I doubt very much that confining the subject matter of the lectureship tours of the American Foundation of Pharmaceutical Education to that of improvement of teaching would be productive of any better teaching than other subject matter. Lectures on teaching improvement would probably be restricted to teachers. Why not print such improvement instructions and send them to the teachers at various institutions. We would hope they read the reports."—Elmer M. Plein.

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"This question reminds me of a friend of mine a few years ago taking a course in educational methods. By his own standards, the professor used one of the poorest methods on how to teach—the lecture method. If we could have an expert on educational methods that was also a specialist in some field in pharmacy that would come to a school and practice what he preaches for at least a few days and then could measure the results of his methods, perhaps some improvement would result. I think periodic criticisms of instructors by students would be

helpful in improving teaching, by giving the instructor an opportunity to utilize suggestions and by eliminating him if his teaching is poor and does not improve."—Kenneth Redman.

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"I was under the impression that the lectureship tours were to be for the students as well as the faculties. If this is so, then it would seem to me that the idea of having the subject matter of these lectures confined to the improvement of teaching would defeat part of the purpose of the lectures. Furthermore, assuming that it were possible to carry out these lectures for faculty only, it would seem to me that it would be very difficult for a man to come in to a college and lecture on all the various fields covered in a college of pharmacy. He would be lecturing to a small group on pharmacy courses; biological sciences would get another small group; and chemistry would be in the same situation. In other words, I don't think it would be feasible."—Tom D. Rowe.

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"Yes, but this would be an extremely expensive method for the presentation of a single lecture to a few embryonic teachers at each school."—Joseph B. Sprowls.

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"I am inclined to think that I would favor the lectureship tours because the students would benefit by these lectures as well as the staff members of the institution at which the lecture is given. Also, the speaker could probably have the opportunity of observing the teaching methods used by the various instructors at that institution."—C. H. Weldon.

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"To my knowledge, the lectureship tours are not related in purpose to the problem of improvement in teaching methods although such an effect might incidentally result. I do not believe that the subject matter of these lectures should be confined to the subject of improvement of teaching."—Allen J. White.

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"Frankly I do not think that lectureship tours will contribute greatly to the improvement of teaching unless these tours are for the period of at least a full quarter or a full semester."—Heber W. Youngken, Jr.

You will recall that at the Milwaukee meeting this committee made a recommendation which was approved by the Association and referred to the secretary of the American

Foundation for Pharmaceutical Education that students holding Foundation scholarships be required to do a minimal amount of teaching, believing this would result in better qualifying them as teachers. Since these scholarships were established for the express purpose of producing teachers in the present emergency, it was felt that this would direct them toward a teaching rather than an industrial career. To date, the chairman has not heard of any action having been taken.

Question No. 5.—Do you still approve of this principle and should we again ask for consideration of it?

Replies:

"I approve of the principle that students holding the Fellowship of the American Foundation of Pharmaceutical Education be required to do a minimal amount of instructing. But I wish to qualify this statement by saying that I do not approve of using these students in the introductory courses."—Charles W. Bauer.

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"I favor the requirement of minimal teaching duties in the fellowships of the American Foundation for Pharmaceutical Education. There is no need to repeat the obvious benefits here."—E. A. Brecht.

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"I still approve the principle that students holding a Foundation Fellowship should do a minimum amount of instruction. I believe that this will do more to stimulate holders of these Fellowships to go into teaching and at the same time it will permit many schools to do away with undergraduate assistants in laboratories and as graders, which in itself is quite demoralizing."—Henry M. Burlage.

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"I do not believe that holders of American Foundation for Pharmaceutical Education Fellowships should be *required* to do teaching, but I do believe that they should be *allowed* to do a small amount of such work."—E. H. Cataline.

* * * *

"I am still of the opinion that the holders of fellowships granted by the Foundation should be required to do some teaching in addition to their graduate work, this because it is my belief that the Foundation Fellowships were originally established in the hope that their allocation might result in the training of more and better teachers in the pharmaceutical field. I think that the committee should determine the disposition made of its previous recommendation and institute whatever steps are needed to implement those activities."—George E. Crossen.

"I approve of the Committee's recommendation that the students holding the American Foundation of Pharmaceutical fellowships be required to do a minimum amount of teaching. I would add to this that this teaching or instruction *should be observed* and the sponsor of the Fellow be *made responsible* for giving the Fellow *constructive criticism* of his teaching technique. Obviously it is not sufficient to just require that a Fellow do a minimum amount of instruction. To be useful he must have his instruction constructively evaluated."—J. M. Dille.

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"I still approve of the principle and it would be well to consider it again, inasmuch as the instructors in pharmacy schools will be sought within the field rather than from the graduates of colleges of education. Under the plan mentioned, at least they will come with *some* experience, even if not with much."—Melvin F. W. Dunker.

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"I approve of the stated principle."—John J. Eiler.

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"I believe that the policy of allowing fellowship holders to do a small amount of instruction is excellent in helping these people to learn to be teachers, provided that that experience is directed by someone who is a teacher. I have noted for some time now the difference in growth of our graduate assistants depending upon the man who was guiding their efforts. There are some teachers who do not know how to use an assistant or train him to do a better job. I therefore approve of this plan and think it should be re-emphasized."—Earl P. Guth.

* * * *

"I definitely believe that graduate students should be required to do some instruction regardless of their intentions after graduation. Teaching is invaluable in their learning to correlate and present facts, to evaluate and rationalize ideas and to stimulate a feeling of importance in themselves and the work they are doing."—James W. Jones.

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"If you will recall my comments of last year re. the requirement of teaching duties by A. F. P. E. Fellows, you will remember that I was opposed to the idea. I still am, and for the same reason, viz., pharmacy needs to develop more research-minded people. Furthermore, without the "inner urge" which a teacher needs, the experience gained will be of little value to the individual. The whole plan looks very much like an inexpensive way to alleviate the teacher shortage."—K. L. Kaufman.

"I approve the recommendation that students holding an American Foundation for Pharmaceutical Education fellowship be required to do a minimal amount of instruction and that his instruction be properly observed and properly criticized."—Elmer M. Plein.

* * * *

"I favor this principle and ask for consideration of it."—Kenneth Redman.

* * * *

"Yes."—Tom D. Rowe.

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"I believe in the principle and urge its consideration. One can learn more by attempting to teach others than by studying for oneself."—Joseph B. Sprowls.

* * * *

"I am in full accord with the idea that American Foundation of Pharmaceutical Education fellows should be required to do a minimum amount of instruction. Some fellows have criticized the idea since they say they are not going into teaching. I do not think that that is a valid criticism because in a good number of instances those very individuals who are criticizing do go into teaching. Also, the experience that a fellow gained by conducting instructional work is invaluable to him. He learns how to prepare and organize lectures and laboratory materials and he has to present the material in such a way that the student can comprehend it. It also gives them an insight into the problems of instructing that many graduate students do not appreciate. I would certainly like to see this made a requirement or make it possible at least to require fellows to do some teaching."—C. H. Waldon.

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"I did not approve the principle last year and still do not."—Allen J. White.

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"It would be highly desirable for the sponsoring professor of the American Foundation of Pharmaceutical Education fellow to schedule a minimal amount of instruction experience during the *final year* of the fellow's degree study. I don't believe that the research load that the average graduate student would be carrying should be jeopardized, however, to have this interfere with degree work. Usually of the program is carefully outlined there would be sufficient time available during a man's last year of research for him to outline a series of lectures and deliver these under the direction of his sponsoring professor."—Heber W. Younken, Jr.

Several members of the committee have suggested that better salaries and proper teaching loads would be a stimulus to better teaching in the pharmaceutical area. Will you answer the following question concerning these points as they apply to your institution?

Question No. 6. (a)—Are the salaries paid the pharmacy staff having comparable qualifications based on the same scale as in other divisions of the university?

(b)—Is the teaching load greater, lower, or the same?

Replies:

"This is a very good question, but it does not apply to our college."
—Charles W. Bauer.

* * * *

(a) "The salaries paid the pharmacy staff are the same and based on the same qualifications as the other departments of the university with the exceptions of the medical and law schools whose teachers (according to hearsay) are paid on an inflated scale because the personnel could earn so much more salary in private practice.

(b) "The teaching loads are theoretically the same, with the exception of the medical school where the teachers are supposed to have one out of three quarters free from teaching duties to enable them to do research."—E. A. Brecht.

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(a) "With regard to salaries paid the staff at the University of Texas, I wish to say we are on the same scale and subject to the same qualifications as other divisions of the University.

(b) "There is a standard teaching load on the campus for undergraduate and for graduate teaching. At present the teaching loads in the college of pharmacy are too great, but this is because of the fact that we have been unable to get sufficient staff members in order to reduce it. We are, however, well on the way to accomplish this as the number of staff members increases and our enrollment is brought down to a nominal number."—Henry M. Burlage.

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"So far as I am able to ascertain, the salaries and teaching load of the pharmacy staff are based on the same scale as in other divisions of this university."—E. L. Cataline.

(a) "The salaries paid the staff members at this institution are on a par with or slightly above those of staff members in other divisions of the College.

(b) "The teaching load of members of the pharmacy staff varies somewhat depending upon the department and the time of year. In no event, however, is the load permitted to exceed 12 credit hours for any one staff member, and those carrying the heavier loads are provided with incidental help, such as laboratory assistants, readers, and so forth."—George E. Crossen.

* * * *

"The salaries and teaching load of the staff at the University of Washington are comparable to those of the rest of the University."—J. M. Dille.

* * * *

(a) "The salary scale is uniform within the institution, with the exception of the medical school.

(b) "The teaching load is no greater and in some instances lower than in the rest of the institution."—Melvin F. W. Dunker.

* * * *

(a) "Yes.

(b) "Same."—John J. Eiler.

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"Your question regarding better salaries to stimulate better teaching is valid only if the individual effected has the qualities of a teacher. There are some individuals who never were teachers and never will be, regardless of their financial remuneration. Proper salaries, however, will encourage some of our undergraduates and graduate students to prepare for the profession. At this university, the salaries of the teachers in Pharmacy is on an equal plane with teachers in other departments rank for rank. There may be some differences, however, based upon merit and the amount of salary any one individual can receive is dependent largely upon the individual himself. Likewise, teaching loads are on the same basis as other departments."—Earl P. Guth.

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"In our College, salaries paid to the pharmacy staff having the same qualifications based on the same scale as in other divisions of the University are better. The teaching load is comparable to that in other divisions."—James W. Jones.

(a) "The salaries paid our staff are based on the same scale as in other pre-clinical divisions of the College, and they compare favorably with those of the University of Virginia.

(b) "Our teaching load is heavier than that carried by other divisions of our College."—K. L. Kaufman.

* * * *

(a) "The salaries paid the pharmacy staff at the University of Washington are on the same scale as in other divisions of the University.

(b) "The teaching loads of the pharmacy staff are favorably comparable to those of other departments of the University."—Elmer M. Plein.

(a) "The pharmacy staff is paid, as high or higher than other staff members having the same qualifications in other divisions of the University.

(b) "The teaching load normally is the same or lower than for other divisions in the university."—Kenneth Redman.

(a) "The entire University operates on the same salary scale. There is no distinction between one college and another within the University.

(b) "Our teaching loads are, for the most part, the same as in other divisions of the University. There are deviations, of course, and we have some faculty members with a slightly larger load than the average and some with a slightly smaller load. We are doing all we can, and with some success, to cut down the teaching load of our faculty members."—Tom D. Rowe.

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(a) "No information available to myself or Dean Lemon, though it can be obtained if essential.

(b) "The teaching load is approximately the same."—Joseph B. Sprowls.

(a) "The salaries paid to the pharmacy staff are essentially the same as those paid in other divisions of the university.

(b) "The teaching load is about the same as in other units of the university.

"I do not feel though that the general salary level for instructional staffs in schools of pharmacy and in other divisions possibly, also, are high enough, and because they are not high enough we are

not able to attract as many competent instructors as we should have. It must be realized that we must compete with industry, and as long as industry pays the salary that it does it is essential that the pharmacy staff be paid comparably so that we may obtain better ones."—C. H. Waldon.

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(a) "The same.

(b) "In general, about the same. In some areas, faculty expected to do research have reduced teaching loads."—Allen J. White.

"The salaries paid to members of this pharmacy staff are on the same scale as in most other divisions of the University. The teaching load fortunately has been reduced recently and is also comparable to that in other divisions. It will be desirable eventually for instructors to be given no more than two courses to teach so that a greater amount of time can be devoted to research and educational extracurricular activities."—Heber W. Youngken, Jr.

At a meeting of the Executive Committee in Columbus, Ohio, in December, 1947, a recommendation was adopted looking toward increasing the income from the *American Journal of Pharmaceutical Education* by accepting advertising. A committee was appointed to decide on the type of advertising that would be acceptable. The decisions of the committee were not unanimous. I am seeking an expression from this committee. Kindly answer the following questions:

Question No. 7.—Would you prefer to have the Journal free from advertising as at present (except books)? If advertising is to be accepted, what type should we take? Kindly illustrate your answers by giving names. The names will be held in confidence and not published in the report.

Replies:

"About advertising matter in the *Journal*, I am strongly in favor of adding to this in order to increase income for support of our very fine publication. In so doing, I should certainly want the advertising limited to a dignified type. There should be nothing in the line of proprietary remedies admitted. The following, however, would be acceptable: book publishers; makers of chemical, pharmaceutical, microscopical apparatus and instruments; chemical manufacturers; crude drug dealers and importers; hotels, resorts, steamships and rail transportation companies (if there is anyone in pharmaceutical education wealthy

enough to take advantage of them); colleges of pharmacy. None of these, in my opinion, would in any way tend to brand the Journal as commercial"—Leslie B. Barrett.

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"Advertising material does not hurt a journal if it is in keeping with the ethics of the profession. Note the advertisements in the *Journal of the American Medical Association*. I think, at all events, that there should be no real objection to the institutional or "House" advertising."—Charles W. Bauer.

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"I would definitely prefer to have advertising included in the *American Journal of Pharmaceutical Education*. Advertising is a wonderful, up-to-date source of information. Furthermore the additional income can be used for a good purpose. *The Journal of Chemical Education* and the *American Scientist* (organ of the A. A. A. S.) are suggested as models of acceptable advertising. It would be desirable to accept advertising on books, instruments, laboratory supplies and equipment."—E. A. Brecht.

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"I have no objection to having a Journal with advertisement if it is of the properly selected, ethical type. The advertisement should by all means include books, and I see no objection to including advertisements of certain very ethical new remedies, but the editorial board should be consulted in the selection of advertising pertaining to these products. I think the *Journal* could well carry advertising having to do with new educational appliances, such as is shown in *School Equipment News*, *Science and Science Monthly*. This is one way our staff members can become aware of new teaching equipment."—Henry M. Burlage.

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"I can see no reason why the *Journal* should not accept advertising of the type found in, for example the *Journal of Chemical Education*, *American Scientist*, *Science*, etc. These are mostly concerned with apparatus, books, chemicals, visual aids, etc.—items which are of value in teaching. The presence of such advertisements in the *Journal* would certainly be an aid to the teacher."—E. L. Cataline.

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"I should dislike very much seeing the *Journal* adopt a policy of accepting advertising matter from the entire pharmaceutical and related fields. On the other hand, I can see no great objection to increasing the income of the *Journal* by acceptance of selected advertising matter. As a possible guide for such selection, I would suggest the policy followed

by *Science* in which advertisements for books and items of equipment are accepted, but not products. I realize that a policy of this type would cut off remunerative advertising from reputable pharmaceutical concerns, but I believe that it would be a more sound policy in terms of a long-range program than would be one which was loosely set up with decisions to be made in a somewhat arbitrary manner by the editor or an editorial board. That is, the question of ethics might well enter the picture, and it would seem to me to be much better to sacrifice a little at the outset than to jeopardize the reputation and standing of the *Journal*. I can well see where the advertising products of the previously mentioned drug houses and those of similar calibre could be entirely acceptable insofar as *Journal* publication is concerned. On the other hand it is not difficult to foresee the possibility of the introduction of advertising of other types of products, notably contraceptives and prophylactics, with the ultimate result that the *Journal* might well become a trade publication rather than an educational journal."—George E. Crossen.

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"I would approve the policy of the *American Journal of Pharmaceutical Education* accepting advertising. I would suggest that such advertising be completely separate from the text matter of the *Journal* so that, if desired, the bindings could be made after the advertising pages were removed. If the policy of accepting advertisements is adopted it would seem to me that the only restriction would be the restriction against unethical or quack pharmaceuticals. I would suggest the same policy be followed as that of the American Medical Association in their journal."—J. M. Dille.

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"The question of the kind of advertising seems to me to be irrelevant. Advertising is bought with the possibility of increasing the business of the advertiser. In some instances advertising contracts are let purely as a gift with little expectation of return. It seems to me that the circulation of the *American Journal of Pharmaceutical Education* is so limited that the advertisers of other than books and instructional supplies would derive no benefit from the advertising and might just as well be approached for an outright gift in support of the *Journal*."—Melvin F. W. Dunker.

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"In the matter of accepting advertising for the *Journal*, I believe that many firms interested in pharmacy would be interested in buying advertising in this journal. I would not at this time want to make an arbitrary list of types of advertisements. It seems to me that the quality of these ads could be controlled very satisfactorily by a committee."—Earl P. Guth.

"I find some objection to the present subscription rate of one dollar per issue of the Journal. If the rate could be lowered by accepting limited advertising, I would favor the thought. The choice of advertisers would be largely the responsibility of the editor. However, only firms that are engaged in sound, active medical research should be considered such as the reputable manufacturers of medicinal products."—James W. Jones.

"I see no objection to the acceptance of high class advertising. The manufacturers might be encouraged to announce their really new products each quarter by way of informative advertisements such as they use in medical journals. This would be of some help to teachers, as well as a real financial aid to the *Journal*. I have in mind such advertisements as appear in the March issue of the *Practical Edition, J. Am. Pharm. Assoc.*"—K. L. Kaufman.

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"I would prefer to have the *American Journal of Pharmaceutical Education* free from advertising. If advertising is accepted, however, it should be restricted to ethical preparations such as are found advertised in the *Journal of the American Medical Association*. Also I would like to make two suggestions should advertising be accepted. The advertising should be kept separate from the text material so that advertising will not have to be included in bound volumes. A table of contents should be on the first page inside the cover of the *Journal* such as it is now. To me a journal which has a hidden table of contents (somewhere within the advertising section) is provoking."—Elmer M. Plein.

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"I see no objection to accepting advertising for the *Journal* on the same basis as say, for the *Practical Edition of the Journal of the A.Ph.A.*"—Kenneth Redman.

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"I would prefer to have the *Journal* free from advertising, as it is now. If advertising is carried, I think we could accept some of the following: Laboratory equipment & supplies, glassware & chemicals."—Tom D. Rowe.

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"I see no reason why advertisements should not be carried for teaching aids, teaching equipment, academic gowns, and materials of that nature. I believe that the advertisements should be limited (as they probably would be) to companies supplying instructional aids or instructional materials, books, and such other materials as would be commonly used only by college people."—Joseph B. Sprowls.

"I can see no objections to the acceptance of advertising in the *American Journal of Pharmaceutical Education* as it would be a means of defraying some of the expenses of this journal. I believe that books of a professional nature, teaching aids such as projectors and so forth, scientific equipment, and one department I would like to see would be a classified advertising section where schools having positions available may make their wants known and also those who are seeking positions may make their availability known. At the present time I can think of no place in a pharmaceutical journal that has such a service, and I think that you could very well handle that in the *American Journal of Pharmaceutical Education* which is read widely in the schools. I believe that all advertising should be of a high calibre and that any advertisement of questionable character be turned down."—C. H. Waldon.

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"I believe that the type of advertising appearing in *Science* would not be out of harmony with the program of the *Journal*."—Allen J. White.

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"I am not familiar with the financial situation regarding the *Journal*. If it is such that more advertisement space is necessary I should be for providing this space. The advertising to be accepted should be largely scientific apparatus and equipment, books, and space for position advertising. If advertisement space is not necessary I would prefer to have the *Journal* free from it. I would rather see more space given to illustrations and photographs if it would be necessary to use advertisement to defray such expenses."—Heber W. Youngken, Jr.

At the December, 1947, meeting of the Executive Committee, Dr. Edward C. Elliott called attention to the need of an annotated index to the *American Journal of Pharmaceutical Education*. He stated that in the conduct of The Survey he had used the *Journal* constantly but under great difficulty, since he had to hunt through ten indexes for the ten volumes, and then, since the index gives only the author and title, he had to look up each reference and read the whole article to see what it was all about. The Executive Committee asked the editor of the *Journal* to investigate the possibilities of having such an index made. This has been done and there is no possibility of having an index compiled without the expenditure

of a considerable sum of money we do not have. I am, therefore, raising the question:

Question No. 8.—Would you be willing to undertake making such an index of one or part of one volume? If this could be done, a bibliographer might be found who would undertake to compile the results into an index covering the first ten years of publication. It would require at least a year to complete the task.

Replies:

"The compilation of an annotated index for the Journal would no doubt make the various numbers more useful to many seeking information from its pages. If to volunteer for part of the work would be of assistance to you and a contribution to the Journal, I shall be glad to offer my services. As a start maybe I should not try more than two numbers of one volume. If I get along well, I might be willing to tackle another two."—Leslie B. Barrett.

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"We should all take part in this important work. I shall be very glad to take a portion of one volume if it will help make such an index possible."—Charles W. Bauer.

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"Yes. I would accept a volume if it need not be completed before October, 1949."—E. A. Brecht.

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"The more completely any publication is indexed, the more valuable that publication becomes, and I believe a cumulative index of the Journal for a ten year period would be a fine thing, and as your plans develop I will be glad to do what I can to accomplish such a purpose."—Henry M. Burlage.

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"If a sufficient number of members of the committee offer to aid in the preparing of an index such as you mention, I shall be happy to help. Perhaps it is unnecessary to say (but I am going to say it) that there should be a general policy formulated as to what such an index shall be and contain, and an explicit guide prepared for the aid of those involved. Otherwise, there will be as many approaches as there are people,

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and the index will be a hodgepodge at best. Too many cooperative ventures fall flat because there is no stated basis upon which the cooperation is to operate. 'Too many cooks spoil the broth' and too many indexers can make an 'inflamed appendix' of an index."—E. L. Cataline.

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"It is my belief that an annotated cross index of the Journal would be of service to many in the field of pharmaceutical education. Although I do not believe that preparation of such an index is properly the work of a committee on Problems and Plans, I would be willing to prepare such an index for a restricted portion of the previous issues, provided an outlined guide were made available in order that all indexes submitted have the same pattern."—George E. Crossen.

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"I am in favor of a decennial index of the American Journal of Pharmaceutical Education and I would be happy to make the index of one or more volumes. Could I suggest that the indexers be directed to prepare each index item on a separate 3 x 5 card. As a bibliographer I can see great advantages to this form from the standpoint of whoever edits and checks the work of the indexers. With each item on a separate card he can make any classification he wishes for checking accuracy and finally make an alphabetical classification which can be sent directly to the printers on the 3 x 5 cards without transcriptions and resulting possible errors."—J. M. Dille.

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"I regret to state that I do not feel that I shall be in a position to help prepare an annotated index for the American Journal of Pharmaceutical Education."—Melvin F. W. Dunker.

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"Unfortunately, my current duties are somewhat more than can be handled in a seven day week."—John J. Eiler.

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"In regard to the making of an annotated index for the Journal finds me without any objections to this being done. On the other hand, I cannot see the value of it. I can appreciate Dr. Elliott's interest in having this done since he apparently is trying to get in a few years what most people in pharmaceutical education already have. Personally, I cannot accept your invitation to undertake making such an index for one volume or part of a volume. I have already accepted committee appointments that will take all my spare time."—Earl P. Guth.

"I will admit that Dr. Elliott may be inconvenienced by the present indexing system as would any individual seeking correlate information as is required by The Survey. However, I question that, for ordinary purposes, the labor and additional expense could be justified. I have not experienced any undue advantage in the use of the present index system."—James W. Jones.

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"I would be willing to undertake the compilation of a part of the index needed for the *Journal* provided enough others also volunteer."—K. L. Kaufman.

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"Obviously a decennial index to the *Journal* would be very valuable. I would be glad to make the index of a part of a ten-year period of publication."—Elmer M. Plein.

* * * *

"I shall be glad to undertake making an index for one volume of the *Journal*."—Kenneth Redman.

* * * *

"I would not be able to undertake making an index for one volume of the *American Journal for Pharmaceutical Education*. If there are not enough people who volunteer to do this work, I believe I can find one of our staff members who would be able to help with it."—Tom D. Rowe.

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"I will be happy to undertake the preparation of an index for one of the volumes."—Joseph B. Sprowls.

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"I can see Dr. Elliott's point in pointing out a need for an annotated index for the *American Journal of Pharmaceutical Education*. I should be more than glad to cooperate in any way that I can to aid in the compilation of such an index."—C. H. Waldon.

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"The project would indeed be a worthy one. If the task is assumed by the Problems and Plans Committee, I feel obligated to do my share. However, I feel that it would be a burden I would have to give a fairly low position on my time priority schedule and would rather not assume the task at this time."—Allen J. White.

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"This would appear to be an excellent project. I would be willing to assist in any way that I can with the effort."—Heber W. Youngken, Jr.

Summary and Conclusions

A study of this report will bring out the following facts, which may be stated as a summary:

1. The quality of the teaching is the problem that is uppermost in the minds of these conscientious, sincere and scholarly young men. Nothing has been said by these men in the way of criticism of a condemnatory nature of the teaching of others. It is in each case an evaluation of their own teaching and an expression of what they have done to improve their own methods. They have shown a longing for a search in other fields for self-improvement. They stress the importance of searching in the unknown as a stimulus for more invigorating and inspiring teaching. The investigative and creative processes are bedfellows of good teaching. The most stimulating thought which has come to me in this study is the knowledge that the men of this committee recognize that the future of pharmacy depends upon the educative process and the improvement of each one's teaching has become the object of greatest concern. As to the necessity of the need of improving the teaching process, the committee is unanimous.

2. So much has been said about the inadequacy of the Conferences of Teachers that it is comforting to find the membership of this committee, all of whom are teachers, so much concerned about the conferences, so sympathetic with their creation and the way they have been conducted and so satisfied with the results they have produced. The report is full of suggestions for making the conferences serve their purposes better.

3. As to the value of the Summer Seminar suggested by The Pharmaceutical Survey for the improvement of teaching, the opinion is divided. It is also divided on the allocation of funds to permit instructors to visit other institutions for the purpose of improvement of teaching.

4. The opinion, universally held, is that the subject of the lectures made possible by funds now allocated by the American Foundation for Pharmaceutical Education for lecture tours, should not be limited to the "improvement of teaching." These funds were allocated largely for the purpose of bring stimulating speakers from other areas to the undergraduate student body and not to a local group of teachers.

5. The majority of the committee is more certain than ever that those holding American Foundation Fellowships should be required to do a minimal amount of teaching in order to better prepare them for teaching following the completion of the Fellowship term. They are also in favor of again reminding the Foundation of this belief.

6. The salary scales and the teaching loads of all schools which have instructors holding membership in this committee are on the same basis as other units of the university.

7. A few would prefer to see the *American Journal of Pharmaceutical Education* entirely free from advertising. A few prefer to have it carry advertising that would be helpful to teachers. The majority feel that advertising would be a financial asset to the *Journal* and not detract from the dignity of the publication.

8. A majority of the committee feel that an annotated index of the *Journal*, covering the first ten years of its publication, would greatly enhance its value and are willing to take part in the compilation provided the task is undertaken.

It is impossible to write a summary that will do justice to this report. The report requires study, and its chief benefit will be to those who are interested in the specific fields that it covers. The information it sets forth and the inspiration which will come as a result of contact with the thinking of a fair cross-section of thoughtful educators, will justify more than a superficial perusal.

Two recommendations are submitted as follows:

1. Inasmuch as no reply has been received concerning a recommendation which was submitted at the Milwaukee, 1947, meeting, we beg to re-submit that resolution: Whereas the American Foundation for Pharmaceutical Education Fellowships are intended to improve and increase our teaching personnel, we recommend that holders of these Fellowships be permitted to do a minimal amount of teaching in order that they may be better qualified because of this experience to enter the teaching field at the time of their graduation and that this information be passed to the Foundation through the proper channels for their consideration.
2. Since we believe the information contained in this report relative to the improvement of teaching is of considerable value, we recommend that the part of the report dealing with the improvement of teaching be respectfully called to the attention of Committee G, the Committee on Teachers Conferences.

Rufus A. Lyman, Chairman.

Replies on Pharmacy Schools in Venezuela

Universidad Central, Caracas, Venezuela.

- 2) Dr. Jesus M. Bianco.
- 3) All the courses are compulsory, and are as follows: Mineralogy and Hydrology, Pharmaceutical Botany, Pharmaceutical Physics, Mineral Qualitative Chemical Analysis, Mineral Quantitative Chemical Analysis, Chemistry of Inorganic Medicines, Chemistry of Organic Medicines (acyclic), Practical Theoretical Pharmacy, Galenic and Industrial Technique, Microbiology, Pharmaceutical Zoology and Parasitological Technique, Chemistry of Organic Medicines (cyclic), Practical Theoretical Pharmacy, Galenic and Professorial, Vegetal Pharmaceutical Matter, Bromatology, Biological Chemistry, Toxicology, Pharmaceutical Legislation—Deontology and Hygiene.
- 4) 15 professors.
- 5) 150 students.
- 6) Four years.
- 7) 1916.
- 8) Forms part of the University.
- 9) Doctor in Pharmacy.

Report of the Chairman of the Committee on Pharmaceutical Research

The activities of the committee during the past year have been somewhat limited because of present unprecedented conditions. The enrollment in most of our member schools is extremely high and the shortage of adequate teachers has not improved appreciably, if at all. Hence, there does not seem opportunity to allow any of the faculty enough time to conduct or supervise much research.

Current Research. In spite of the unfavorable circumstances, however, the quality and quantity of published reports appear to have increased noticeably. Once again it must be observed that the lists given in the *Journal* are not complete, because some schools are not submitting the necessary data. The administrative officers of each member institution should report to the Editor, say at a given time each year, the entire list of publications by members of his staff during the previous twelve months. Then, and only then, could each of us gain a correct idea of what all of our schools are contributing. The committee has endeavored to keep in touch with the entire situation and, on the whole and considering all conditions, is favorably impressed with the improvement.

The situation in the way of wider distribution has also been somewhat better. As is well known, in the past most of the research of our faculties was limited to only a few schools and to a comparatively few individuals. In recent years, however, other institutions have been added to the list, and the number of individuals has more than doubled.

Nevertheless, there is considerable room for improvement. As has been pointed out previously, we feel that no teacher is at maximum efficiency unless he is currently doing

some investigational work. Yet such work is being done at less than half of our member schools, and even there by only a small percentage of the teachers. Some will argue that many good instructors are not good research workers, but it may also be maintained in refutation that such individuals are the sort that never have tried; conducting a piece of research, no matter how small, might improve their teaching wonderfully.

A Program. The greatest stumbling block in the way of an adequate program is the inability to allow our faculties sufficient time. In a few institutions this factor has been overcome, but in the majority there is such a shortage of good teachers that it is at present impossible to make allowance for research or training graduate students. As was pointed out last year, this has led to a vicious circle: fewer teachers provide fewer trained men to furnish replacements in school and industry; industry offers greater inducements to the remaining teachers, so the instructional staff gets smaller and produces even less new men.

The obvious remedy was also pointed out, and we quote from the report of last year. "Industry should lend back to the schools every one of the persons who were formerly teachers in our member schools and even others who are qualified. Then undergraduate and graduate instruction could be instituted on an efficient basis, and in time we could educate a sufficient number of persons to staff the schools and, at the same time, give industry enough scientifically trained personnel to meet its needs. Instead of a vicious circle, we would then have one of satisfying rotation. Furthermore, the scientists who would thus be lent back to the schools could institute and maintain much of the research that is intended at present for them to conduct in industry, and they would have the not inconsiderable assistance in that research of candidates for higher degrees. Since the benefits to be derived from that research could reasonably be allocated to individual, self-sacrificing manufacturers, no such commercial institution would suffer much from the process and in the end might

benefit tremendously." Still another advantage to such a program rests in the fact that the problems to be investigated in the school would be up to date and even vital, since they would be formulated by the industrial firms that should know contemporary needs.

We recommend once more and urge strongly that the Executive Committee take the necessary steps to institute such a program.

E. V. Lynn, Chairman

DATA CONCERNING SOUTH AND CENTRAL AMERICAN SCHOOLS (continued)

Replies on Pharmacy Schools in Chile

- 1) Escuela de Quimica y Farmacia de la Universidad de Santiago, Santiago, Chile.
 - 2) Sr. Juan Ibanez G.
 - 3) Botany, Chemistry (inorganic and physical), Mathematics, Galenic Pharmacy, Pharmacognosia, Bacteriology, Organic Chemistry (2 parts), Industrial Pharmacy, Biological Chemistry, Bromatology and Toxicology, Deontology and Legislation, Hydrology and Mineralogy, Physical-Chemistry, Anatomy and Physiology, Industrial Chemistry, Pharmacology, Chemical Pharmacy.
 - 4) 23 professors
 - 5) 200 students
 - 6) Five years.
 - 7) February, 1833.
 - 8) Part of University of Santiago.
 - 9) Pharmaceutical-Chemist of the University of Chile.
-
- 1) Escuela de Quimica y Farmacia de la Universidad de Concepcion, Concepcion, Chile.
 - 2) Sr. Juan Perello.
 - 3) See No. 3 above, as this point is identical here.
 - 4) 17 professors
 - 5) 110 students
 - 6) Five years.
 - 7) 1919.
 - 8) Part of University of Concepcion.
 - 9) Pharmaceutical-Chemist of the University of Concepcion.

Report of the Chairman of the Committee on Graduate Study in Pharmacy

An important function of the Committee on Graduate Study in Pharmacy has been the compilation of data on available assistantships, fellowships, and other sources of financial aid to graduate students, and to make such data available for publication at a suitable time each year. At a time when superior students should be encouraged to pursue graduate work in the fields of pharmacy, information concerning financial assistance is of particular importance. The need for individuals with advanced training in the field is quite apparent and, if superior undergraduate students are stimulated to continue training at the advanced level through proper dissemination of information concerning financial aid, the pharmacy profession will benefit. With this view in mind, the Committee has obtained as much information as possible and submit the following compilation concerning financial assistance.

The "American Foundation for Pharmaceutical Education" fellowships in pharmacy are of major importance and should be called to the attention of all students interested in graduate education. The Foundation has announced a limited number of fellowships for students seeking graduate degrees in pharmaceutical subjects. These fellowships are open to students (men or women) qualified for registration in approved graduate schools or colleges for one or more of the following major fields: Pharmacy, Pharmaceutical Chemistry, Pharmacology, and Pharmacognosy. It should be emphasized that the student may receive such a grant and carry out his advanced work at an institution of his own choosing, provided the institution meets the approval of the Foundation. Each Fellow will receive from the Foundation a stipend to cover the year of his appointment, plus an allowance for tuition and miscellaneous term bills. The fellowships are granted on a yearly basis and must be renewed

at the end of that time. Application forms and information concerning Foundation fellowships may be obtained by writing to the "Board of Grants, American Foundation for Pharmaceutical Education, 330 West 42nd Street, New York 18, N. Y.

In addition to the financial assistance provided by the Foundation, a considerable number of fellowships and assistantships are available at different institutions. In order to obtain up-to-date information on the assistance available, the Committee distributed questionnaires to the Deans or Directors of the sixty-two member schools of the Association early in the spring of 1948. Forty-six replies to the questionnaire were received. Of the sixteen schools which did not respond, it is doubtful, with the exception of Massachusetts, Nebraska,* and Wisconsin, whether any of the schools not replying, offer or intend to offer graduate instruction leading to advanced degrees. Therefore, the information obtained may be considered complete with the exception of the above three mentioned schools.

Thirty-one schools offer graduate courses leading to an advanced degree in one or more of the four major fields of pharmacy, i.e., pharmacy, pharmaceutical chemistry, pharmacology, and pharmacognosy. Seventeen schools offer graduate courses leading to both a Master's and Ph.D. degree in one or more of the four major fields. Fourteen offer only a Master's degree in one or more of the four. Five schools offer graduate courses for both a Master's and a Ph.D. in all four major fields.

The available data on financial assistance for graduate students as of September 1948, are compiled in the following table:

* Nebraska tardily reports as follows: 7—\$750 assistantships; 1—\$1000 fellowship; all for 9 months requiring 12-15 hours per week, all positions filled.

**Financial Assistance Available For Graduate Students
in Pharmacy as of September, 1948**

<i>School</i>	<i>Yearly Stipend</i>		<i>No. of months</i>	<i>No. of Hrs./Wk.</i>	<i>No. now open for occu- pied</i>	<i>No. appoint- ment</i>
	<i>Fellow- ships</i>	<i>Assistant- ships</i>				
University of Buffalo	\$ 500		10	Not Spec.	1	0
	2000		10	12	1	0
		\$1000	8	12	0	3
		1000*	10	15	1	1
University of California	500		9	None	0	1
	300		9	None	3	....
		1020	9	12-14	5	3
	300*		9	....	....	1
	600*		9	....	....	1
	750*		9	....	....	1
	800*		9	....	....	2
	900*		9	....	....	12
	1000*		9	....	....	8
University of Colorado		600	9	12	7	7
		675	9	15	5	5
	600†*					
	tuition		9	None	10	10
	400†*					
	tuition		9	None	10	10
	600†*					
Columbia University	tuition		12	None	3	3
	tuition*		9	None	40	40
	600*					
	tuition		8	16	0	1
	850		8	16	1	0
	200		8	16	1	0
		1000	9	16	0	2
Duquesne University		1000*	9	16	0	6
		1000	8	10	1	1
		2500	9	16	1	0
University of Florida	1800		12	6	0	2
	760		12	0	0	1
		1200	12	12	2	4
	1200*		12	0	6	4
	1000		9	12	all	0

School	Yearly Stipend		No. of months	No. of Hrs./Wk.	No. No. now open for occu- appoint- ment	
	Fellow- ships	Assistant- ships				
University of Illinois	1800		10	40	0	2
		2600	10	....	2	5
	800†		10	....	0	2
	660†‡					
	Room & Board					
	†Two-third time graduate work.					
State University of Iowa	1200		12	26	1	1
	900		12	12	2	0
	600		12	8	1	0
		720	12	12	4	0
		450	10	5	0	1
University of Kansas	1500		11	....	3	0
	1000		9	15	1	2
	* 750		9	12	2	1
University of Maryland†	1000		12	12-14	....	1
	2000		10	12-14	....	2
	1500		10	12-14	....	1
		900	9	12-14	5	2
		400	8	6- 7	1	....
		1200	12	12-14	1	....
	100 (Alumni Grant)					
University of Michigan	100		9	12	all	0
	1200		9	12	all	0
	750		9	12	all	0
	1650		9	12	all	0
	1888		12	....	2	0
	1000		12	....	5	0
University of Minnesota	1000		12	0	8	1
	500		12	0	1	0
		1200	12	12-14	2	0
		900	9	12-14	7	0
University of Mississippi		300	9	10	....	6
	500*		9	0	....	10
		300*	9	10-12		15
Montana State University		800	9	15	2	2

<i>School</i>	<i>Yearly Stipend</i>		<i>No of months</i>	<i>No. of Hrs. Wk.</i>	<i>No. now occu- pied</i>	<i>No. open for appoint- ment</i>
	<i>Fellow- ships</i>	<i>Assistant- ships</i>				
University of North Carolina	1000		9	0	1	5
		600	9	15	2	2
Ohio State† University	2000		11	....	....	1
		1080	11	14	9	5
		1500	11	20	9	3
		(3000)	11	....	1	2
		(Assist.) (Instructor)				
Oklahoma University		810	9	....	4	0
Oregon State College		750	10	15	0	1
University of Philippines	500 (Free tuition to all honor students)		....	....	....	1
Purdue† University	1200		12	30	9	13
	480		12	10	0	1
	600		12	10	2	0
		1200	10	20	11	0
		600	10	10	2	0
		1440	12	20	6	0
	1200*		12	20	1	0
		1200*	10	20	1	0
Rutgers University		1200	11	12	2	2
	State Scholarships (All tuition and fees paid)					
University of Texas	1080-1350		9	30	2	2
	1404-1512					or
	1566-1620					more
	Several assistantships available (Number varies per semester)					
	*Tuition scholarships					
State College of Washington	900		9½	0	....	3
University of Washington	990-1080		9	18	7	5
	500		....	....	....	1

School	Yearly Stipend		No. of months	No. of Hrs. Wk.	No. now open for occu-	No. appointed
	Fellowships	Assistantships				
Wayne University	100 Scholarship		12	----	6	0
	175 Scholarship		12		1	0
Western†		1100	10	15	1	2
Reserve		1320	12	15	1	1
	One \$1000 American-Scandinavian Scholarship (Tuition and Fees Paid)					

*Fellowships and assistantships available to all students in the University of which the pharmacy school is a part.

†Offer graduate courses for both a masters and a Ph.D. in all four major fields.

The trend in graduate education in pharmacy may be indicated by a compilation of the number of schools offering graduate instruction leading to advanced degrees in the four major fields in the years 1946 and 1948.

The number of schools offering the Masters' degree and the Ph.D. degree are listed for each of the four major fields.

Degree	Pharmacy		Pharmaceutical Chem.		Pharmacology		Pharmacognosy	
	1946	1948	1946	1948	1946	1948	1946	1948
Ph. D.	7	8	11	15	6	10	8	10
Masters'	20	22	23	27	15	17	10	16

It will be noted that there is an increased number of schools offering graduate courses. This increase in most cases has resulted from the extension of graduate work into other fields of pharmacy in those schools which already have graduate instructional programs established, rather than for schools that have no graduate instruction at present to initiate entirely new programs.

The trend in graduate education in pharmacy may also be indicated by a study of the number of graduate students in

our colleges. The data is summarized according to the various types of appointments on which the students are maintained.

Number of Graduate Students in Pharmacy

Type of Appointment	Number as of June 1948 Masters' Ph.D.		Expected Number as of Sept. 1948 Masters' Ph.D.		Total Number as of June 1946
Assistantship	54	37	53	35	38
Fellowship	40	60	43	46	36
G. I. Benefit	13	21	17	21	27
Scholarship	0	0	0	2	14
Self Financed	23	15	20	9	14
Foreign Govt. Sponsored	1	1	0	1	3
Instructors	5	3	6	0	
Govt. Pension		1		1	
Total Number	135	138	139	115	132

Total number of graduate students as of June 1946 was 132.

Total number of graduate students as of June 1948 was 273.

Expected number of graduate students as of Sept. 1948 is 258.

The information shows a very substantial increase in the number of graduate students in schools of pharmacy within the last two years. The expected number of graduate students indicates a decrease in the number of students for next year; however the decrease is small, indicating that graduate enrollments will remain at approximately the present level for the coming year.

It has been the custom of this committee to collect the data relative to the financial assistance available to graduate students in April and May and submit the information, in the yearly report of the Committee sometime during the summer months. The information presented is of greatest value to undergraduate students planning on entering graduate schools in September and October. These students usually

must make such plans as early as April and May. Since this is true, the Committee suggests that such future information be obtained at the first of the year and submitted for publication in the April issue of the American Journal of Pharmaceutical Education as a part of the report of this Committee. Such procedure will increase the value of the Committee's report to graduate students desiring appointments at the beginning of the regular school year in September. .

The committee emphasizes the responsibility of each member college of the A.A.C.P. to make a concerted effort to inform qualified members of their graduating classes of the need for graduate students in Pharmacy, of the opportunities for graduate study, and of the advantages to be gained in pursuing work toward a graduate degree. Especial effort should be made to aid the qualified student in obtaining financial assistance.

The committee is of the opinion that continued interest by the Association in the advance of graduate education in the member colleges will contribute to the promotion of the pharmaceutical profession.

J. E. Christian, Chairman

**DATA CONCERNING SOUTH AND CENTRAL AMERICAN
SCHOOLS (continued)**

Replies on Pharmacy Schools in El Salvador

- 1) Facultad de Quimica y Farmacia de El Salvador, C.A.
- 2) Dr. Carlos Alcaine, Dean.
- 3) 25 courses, all compulsory.
- 4) 17 professors .
- 5) 86 students.
- 6) Five years.
- 7) The Facultad de Farmacia y Ciencias Naturales was always connected with the facultad de Medicina up to 1927, at which time it became independent (separated) and was called the Facultad de Quimica y Farmacia.
- 8) Part of the Universidad Autonoma de El Salvador.
- 9) Degree of Doctor in Chemistry and Pharmacy.

Report of the Committee on the Application of Techniques Used in the Armed Forces to Pharmaceutical Education

The Committee on Application of Techniques Used in the Armed Forces did not attempt an active program during 1947-48, pending action of the Executive Committee of the Association. The recommendations that the committee set forth as a program for future work were embodied in the report submitted to the Milwaukee meetings (*Am. J. Pharm. Ed.* XI 433 (1947)). Since the Committee on Resolutions referred the recommendations to the Executive Committee, further work has been held in abeyance until final action by the latter committee has been taken.

D. C. Brodie,
Chairman

DATA CONCERNING SOUTH AND CENTRAL AMERICAN SCHOOLS (continued)

Replies on Pharmacy Schools in Guatemala

- 1) Facultad de Ciencias Químicas y Farmacia, Universidad de San Carlos, Guatemala.
- 2) Licenciado Julio Valladares Marquez.
- 3) Studies are offered in Chemical Pharmacy, Biological Chemistry, and Chemical Engineering (See charts attached).
- 4) Professors.
- 5) The class of 1947 had 90 students, as follows: Pharmacy 46, Biological Chemistry 23, Chemical Engineering 21. Total 90.
- 6) Six years for each course.
- 7) San Carlos University established in 1640. Pharmacy School formed in conjunction with Medical School, 1840. The Facultad de Farmacia, as member of the Universidad, 1918.
- 8) Forms part of the University of San Carlos.
- 9) Degree is that of "Licenciatura" (actually, "licensed" in pharmacy).

Report of the Representatives to the National Drug Trade Conference

The conference is made up of representative of the ton, D. C. on December 10th, 1947, at the Hotel Statler. The meeting has been publicized in the pharmaceutical press and only a summary is presented herewith.

The conference is made up of representatives of the American Association of Colleges of Pharmacy, the American Drug Manufacturers' Association, the American Manufacturers' Association, the American Pharmaceutical Association, the National Association of Boards of Pharmacy, the National Wholesale Druggists' Association, the Federal Wholesale Druggists' Association, the National Association of Retail Druggists and the Proprietary Association. Our Association was represented by Dr. W. Paul Briggs, and Dr. Tom D. Rowe, the latter acting as an alternate for Dr. Ernest Little. Dean J. Lester Hayman was unable to attend.

A resolution which had been presented to the Executive Committee proposing to change the Constitution and By-Laws relating to the unanimous consent rule with respect to the election of new members and Resolutions, and replacing same by a two-thirds required vote was presented for action. After discussion the resolution was tabled by a vote of 6 to 3.

In the absence of Chairman Fischelis, the Report of the Committee on Uniform Drug Legislation was read by the Secretary. Dr. Fischelis called attention to the agreement reached by the Conference with respect to a uniform state food, drug and cosmetic act, a uniform state caustic poison act, and a uniform state narcotic act. The Committee is continuing work upon a uniform animal remedies act, and progress was reported in regard to an adequate state poison act. Chairman

Fischelis reported that the uniform state barbiturate bill was introduced in the legislatures of Alabama, Idaho, Maryland, Ohio, South Dakota and Wyoming, and was passed in Idaho, Maryland and South Dakota. Difficulty was reported in regard to the uniform state pharmacy bill with the portion providing "restricted sales provisions."

The application of the National Association of Chain Drug Stores for membership in the Conference was placed before the Conference and same was unanimously approved.

Mr. John D. Conner, General Counsel, National Association of Insecticide and Disinfectant Manufacturers gave a resume of the new Federal Insecticide, Fungicide and Rodenticide Act as it affects the drug wholesaler and retailer.

Dr. Rowe presented a statement by Dr. Ernest Little on the American Foundation for Pharmaceutical Education in which he expressed general approval of all that the Foundation has done to date, but called attention to the Conference resolution of 1946 in which "the directors of the Foundation were requested to give consideration to the advisability of proceeding as expeditiously as advisable to accumulate a fund of five million dollars, to be kept as an endowment fund, the income from which could be used in such manner as seemed desirable." Dr. Little pointed out that it was the intention of the Conference that the Foundation should operate, in general, as other foundations operate, and that it was not the intent that it should merely be an "in-between distributing agency." He reported that "certain of the directors of the Foundation seem to be opposed to having the Foundation function in this manner" and stated their arguments for such action, as well as his views opposing such action. Dr. Little's statement included a resolution which was later adopted by the Conference.

Dr. E. C. Elliott, Director of the Pharmaceutical Survey, gave a report in regard to the progress of The Survey, and made a plea for financial cooperation by the associated groups.

The Conference adopted resolutions summarized as follows:

1. Urging the A.Ph.A. to engage in the preparation of a complete and comprehensive Directory of Pharmacists and the pharmaceutical industry, at the earliest possible moment.

2. Requesting the directors of the American Foundation for Pharmaceutical Education to give continued consideration to the possibility of building up a sizeable invested fund, the income from which can be used to promote the objectives of the Foundation as approved by the Conference.

3. Recognizing the necessity of a program of scientific research in the general subject of retail handling costs.

4. Opposing the Kefauver Bill, HR 3736, which proposes to give to the Federal Trade Commission arbitrary authority to prevent consolidations, mergers, etc., when in its sole judgment such would tend toward monopoly or restraint of trade, and explaining the position of the Conference that it in no way condones monopoly or restraint of trade but considers it unwise to vest such sweeping authority in the Commission until its orders, edicts and decrees are made fully subject to judicial review and revision.

5. Urged favorable Congressional action with regard to legislation which will provide a census of business to be conducted periodically once every five years, and approved passage of HR 1821 or S 554.

6. Favoring legislation now in Congress providing for raising the annual compensation of members of the Federal Trade Commission from \$10,000 to \$15,000.

7. Opposing Federal Barbiturate Legislation, especially the Rogers Bill, HR 6178, and urging the states to enact effective legislation for the regulation and control of barbiturates and their preparations.

8. Expressing approval of the aims and purposes of The Pharmaceutical Survey and expressing its willingness to cooperate in the implementation of its recommendations so that The Survey may achieve, in large measure, the objectives for which it was intended.

9. Urging the press to make proper distinction between the words "drugs" and "narcotics," and to refrain from using the word "drugs" when "narcotics" is intended, which is misleading and often tends to cast an unfavorable reflection upon pharmacy and the drug industry.

10. Commending the National Association of Chain Drug Stores for its survey of Fair Trade prices and the disclosure of its findings, which the Conference feels supports and justifies the operation of Fair Trade.

11. Urging the elimination of the 20 per cent tax on toiletries, and support of HR 4287, a bill to eliminate this tax.

12. Urging a reduction of the tax on medicinal alcohol, and petitioning Congress to reduce the tax on medicinal alcohol to \$1.00 per proof gallon.

13. Approved the appointment of a special committee to study the rules and regulations of the Conference with special reference to their applicability to the Conference as it seeks to meet current problems of the industry.

14. Urging all drug manufacturers, wholesalers and retailers to give maximum financial support to the Foundation in the campaign which it is now conducting in order that sufficient funds may be available to support an adequate number of Fellows to supply the urgent demand for teachers and research workers.

The following officers were elected by unanimous vote. President, Carson P. Frailey; Vice-President, Dr. Frederick J. Cullen; Secretary-Treasurer, R. C. Schotterer. Dr. Ernest Little was appointed as a member of the Executive Committee representing the American Association of Colleges of Pharmacy.

W. Paul Briggs

Ernest Little

J. Lester Hayman

The representatives of the National Drug Trade Conference submitted the following resolution to be considered by the American Association of Colleges of Pharmacy:

Resolved that the American Association of Colleges of Pharmacy request the Directors of the American Foundation for Pharmaceutical Education to give continued consideration to the possibility of building up a sizeable invested fund, the income from which can be used to promote the objects of the Foundation.

Report of the Editor of the American Journal of Pharmaceutical Education

In the previous annual reports, the Editor has been content to let the *Journal* speak for itself as to the value of the service it renders. So many of its readers have expressed appreciation of the value of its pages that it seemed little need be said. Although the subscription price was doubled with the beginning of 1947, it resulted in the loss of but five subscribers. This would seem to indicate that it was rendering a worthwhile educational service. During the current year only six subscriptions have been cancelled; two by death, three with no explanation, and one because the subscriber felt the *Journal* was not worth one dollar an issue and he was cancelling his subscription until the price came down. That, of course, can never happen until the financial crash comes and then it will probably be more difficult to raise two dollars than it is to raise four now. The only relief I can now see is to find some other means of *Journal* support than by personal subscription. The budget for the year 1947-48, which was approved at the Milwaukee meeting, allowed \$3200. for the publication of the *Journal*. Since payment for the July issue is never possible before the end of our fiscal year (July 31), the amount would cover the publication expenses for the July and October issues of 1947 and the January and April issues of 1948. When the January 1948 issue was paid for, I found we had exceeded the budget by \$385.05 and had no funds left to pay for the April issue, although copy was already in the printer's hands. There seemed to be but two courses to follow. Either reduce the *Journal* to pamphlet size or find money from other sources to complete the publication for the current year. The latter course seemed the wiser. An appeal was made through Chairman B. V. Christensen of the Executive Committee asking aid from the American Foundation for Pharmaceutical Education. The Board of Directors was

to hold a meeting in New York in April. Dean Christensen could not attend the meeting but he requested Dean Hugo Schaefer to present the problem to the Board. This he did, and as a result the Foundation granted \$2500. to cover the present emergency. But, what is much more important, the Foundation appointed a sub-committee of the Board of Directors to make a study of the *Journal's* needs and possible services and report back to the Board at a later meeting. The Editor believes that the *Journal's* needs and possibilities have never been adequately presented to the Foundation. Since many in our own group are in the same relative position, the Editor believes the presentation of the *Journal's* needs, finances and its possibilities of service will be best served by the publication of the following correspondence with the Sub-committee of the Board of Directors of the American Foundation for Pharmaceutical Education.

The following letter was received from Mr. Fred A. Lawson, chairman of the Sub-committee of the Board of Directors, under date of April 29, 1948.

Dear Dean Lyman:

At the recent meeting of the Board of Directors of the American Foundation for Pharmaceutical Education, consideration was given to the request made by Dean Christensen, who unfortunately was unable to be present, for funds to assist in the financial support of the *American Journal of Pharmaceutical Education*.

While the directors were very much in sympathy with this need and recommended favorable emergency action, they were also interested in learning what the plans might be for your publication during the coming years.

To this end a special sub-committee of directors was appointed to make a study of the situation and report back at a later meeting. The committee appointed was Fred A. Lawson, chairman, Edgar S. Bellis, and H. Evert Kendig.

For the purpose of our discussion, the committee has requested me to obtain certain information for their guidance in order that they may possibly be able to make some helpful suggestions and in order that they may recommend to the board of directors any further cooperative assist-

ance that may be indicated. I am sure you will understand that it is not the purpose of the committee to interfere in any way with the management of your fine publication but rather it is our hope that we may be able to render some helpful service as a result of our studies.

It will be most helpful if we can have the following information.

1. The present circulation of the *Journal*.
2. The number of active paid subscribers and the amount of money received from subscriptions,
3. The present annual cost broken down by issues, covering printing, mailing, and other expenses in connection with publication. Comparative figures showing the total cost of publication and total income during the past five years.

If you will cooperate with us by giving us this confidential information, we will be glad to give the whole matter our thoughtful consideration.

Very sincerely yours,
Fred A. Lawson

Chairman, Subcommittee of Board of
Directors
American Foundation for Pharmaceutical
Education

On May 4, 1948, the Editor sent the following reply.

Dear Mr. Lawson:

I have your kind letter of April 29, 1948, asking for certain information relative to the *American Journal of Pharmaceutical Education*.

I shall be more than happy in giving you the information you ask for. There are a few of the details connected with the publishing of the *Journal* that I may have to obtain from Prof. Louis C. Zopf of the State University of Iowa, who is the Secretary-Treasurer of the American Association of the Colleges of Pharmacy. All of the finances of the *Journal* have been handled through him and Prof. Clark T. Eidsmoe of the Division of Pharmacy of the South Dakota State College, whom Prof. Zopf succeeded a year ago. I shall have the information ready for you in a week or ten days.

I shall at the same time present the plans that we have had in mind to increase the usefulness of the *Journal* if we were financially able to do so. These plans are essentially those that have been presented from time to time by Dean Kendig and with which he is most familiar and even better qualified to present. I shall, however, present them in their basic form.

I am most grateful to the Foundation for making the contribution to the *Journal* in the current emergency. This deficit was due to two factors. First was the terrific increase in cost of publication as my report will show; and second, the publication of a large amount of material requested by Dr. Elliott having to do with The Pharmaceutical Survey studies. This material was not suitable for any other pharmaceutical publication, and it naturally belongs to an educational journal and we have offered the pages to Dr. Elliott as a part of our contribution to The Survey. Nevertheless, to do so I have held in abeyance much material of an educational nature which should have been in print.

I am even more grateful that the Foundation has named a Committee to study the needs and the possibilities of service inherent in the publication and a wider distribution of the *Journal*, and I assure you that I shall give the information you ask for at the earliest possible moment and in a form that will enable the Committee to see the problem with clarity.

I want to thank you personally, Mr. Lawson, for the kind and sympathetic tone of your letter.

Rufus A. Lyman, Editor

Under date of May 17, 1948, the Editor sent the following letter giving the information Mr. Lawson asked for.

Dear Mr. Lawson:

In this letter I am answering to the best of my ability the questions you asked in your letter of April 29, 1948, relative to the cost of publication of the *American Journal of Pharmaceutical Education*, and also what plans we have for the future usefulness of the *Journal*, and other items germane thereto.

All items relative to income and cost of publication are taken from the reports of the Secretary-Treasurer of the American Association of Colleges of Pharmacy which are published annually in the October issue of the *Journal*.

As you requested, I tabulated the income and cost over a period of five years, beginning August 1, 1942. The items in each case cover the period from August 1st of one year to July 31st of the following year, because the annual meeting of the American Association of Colleges of Pharmacy is held in August and the books are closed as per July 31, preceding the month in which the meetings are held. I have broken down the costs for each year and have also commented briefly following each breakdown so as to show where and when the cost of publication

increased. I also indicated the income from subscriptions and advertising.

*Breakdown of Income and Cost of Publication Year by Year
For the Year August 1, 1942 to July 31, 1943*

<i>Receipts</i>	<i>Cost of Printing</i>	
\$ 586.25 from subscriptions	\$1,600.60	Printing
48.40 from advertising	7.35	Cuts
	59.00	Postage
	143.50	Clerical
<u>\$534.65 Total</u>	<u>\$1,810.75</u>	<u>Total</u>

When publication of the *Journal* was begun in 1937, the cost was \$2.30 a page for all kinds of type for an issue of 1000 copies. We found this number was more than was needed and the quarterly issue was reduced to 700 copies at a cost of \$2.20 a page. This charge was made with the October, 1942 issue.

For the Year August 1, 1943 to July 31, 1944

<i>Receipts</i>	<i>Cost of Printing</i>	
\$ 525.10 Subscriptions	\$ 1,516.80	Printing
25.00 Advertising	12.40	Cuts
	66.00	Postage
	107.10	Clerical
	10.60	Letterheads
<u>\$ 550.10 Total</u>	<u>\$ 1,712.90</u>	<u>Total</u>

For the Year August 1, 1944 to July 31, 1945

<i>Receipts</i>	<i>Cost of Printing</i>	
\$ 537.00 Subscriptions	\$ 1,909.50	Printing
30.00 Advertising	53.10	Postage
	6.22	Cuts
	80.50	Clerical
	3.25	Stationery
<u>\$ 567.00 Total</u>	<u>\$ 2,052.57</u>	<u>Total</u>

At the beginning of this year the cost of printing 8 point type was increased to \$3.30 a page; the 10 point remained at \$2.20 a page. The number of pages printed in 8 point varies from issue to issue but is usually about one-third of the total number of pages.

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For the Year August 1, 1945 to July 31, 1946

<i>Receipts</i>		<i>Cost of Printing</i>	
\$ 541.10	Subscriptions	\$ 1,568.60	Printing
		40.70	Cuts
		60.00	Postage
		110.00	Clerical
		12.00	Stationery
<hr/> \$ 541.10 Total		<hr/> \$ 1,791.30 Total	

For the Year August 1, 1946 to July 31, 1947

<i>Receipts</i>		<i>Cost of Printing</i>	
\$ 655.50	Subscriptions	\$ 2,809.50	Printing
		10.32	Cuts
		75.00	Postage
		142.00	Clerical
<hr/> \$ 655.50 Total		<hr/> \$ 3,036.82 Total	

In January, 1947, the printers found it necessary to increase the price of pages in 10 point from \$2.30 to \$3.00 a page, 8 point from \$3.30 to \$4.50 a page.

To meet these mounting costs of publishing the Journal the Executive Committee at its fall meeting in 1946 decided to increase the subscription price from \$2.00 to \$4.00 annually, effective January 1, 1947. We were much concerned about this increase for fear it would cut down the circulation and defeat the very purpose of its publication. The loss of subscribers, however, was not as great as might have been expected. Neither did the income increase as much as we had hoped. This was partly due to the fact that many renewed and paid their subscriptions before the beginning of the new year and before a public announcement could be made that the price had been increased. The Committee thought it best not to ask for an additional \$2.00 for 1947 from those who had already paid since it might engender more ill feeling than the extra income might be worth.

For the Partial Year from August 1, 1947 to May 15, 1948

<i>Receipts</i>		<i>Cost of Printing</i>	
\$ 1,353.10	Subscriptions	\$ 3,412.00	Printing
		100.35	Cuts
		34.05	Postage
		18.65	Stationery
		20.00	Labor for mailing
<hr/> \$ 1,353.10 Total		<hr/> \$ 3,585.05 Total	

On January 1, 1948, the printer was forced to sign new contracts for employees in his shop. To meet the increased cost in wages he raised the price of printing 10 point from \$3.00 to \$3.60 a page. Other items were held at the same level. There is an additional item of \$20 for mailing which did not appear in previous years. This is because at the University of Nebraska I personally did the mailing to save the Association the cost, but when I came to the University of Arizona it was impossible to do this, and the printer charges \$10.00 an issue for this service.

The great increase in cost this year is in part due to the fact that we have printed a considerable amount of additional material for The Pharmaceutical Survey. There were certain studies Dr. Elliott wanted to present to the whole educational group while The Survey was in progress. For example, in the January issue the paper on "Abilities and Interests of Freshmen" took 66 pages of printed matter and tables and 52 pages of charts, which cost \$424.80, besides the copper plates which cost \$100.95 additional. We have been glad to render this service to The Survey, but it increased the cost of the *Journal*. \$3,200 was the sum allocated to me for this year's *Journal*, so with the first three issues we had exceeded that sum by \$385.05, and that is why I appealed to the Foundation through Dr. Christensen for help in this emergency, and I am grateful to the Foundation for the response.

A study of the current year's cost will show no money has been spent for clerical service. This is because when I came to the University of Arizona last September to implement pharmaceutical instruction in this University it was with the understanding that I should have time for my editorial work. They not only gave me the time, but also all the clerical assistance that I needed to carry on the work of the *Journal*. Because I had more time and more clerical help, it has enabled me to make an effort to increase the subscriptions of the *Journal*. About 100 new subscribers have been added to the list. This accounts for the increased income. That increase has been due largely to additional subscriptions which have come from members of the boards of pharmacy through the aid of Secretary Costello, and from such men as Dean Schaefer of Brooklyn who induced 18 members of his Board of Trustees to subscribe, and from Dean Newton of Massachusetts who obtained 15 subscriptions from his Trustees. Several boards of pharmacy have subscribed 100 per cent.

At this date there are 288 paid-up subscribers to the *Journal*. This does not include the 63 colleges that hold membership in the Association but pay for one subscription each out of the Association membership fee. There would seem to be a discrepancy between the total income and the number of paid subscribers. This is due to the fact that some subscribers pay two years at a time. The American

University at Beirut paid for 10 years in advance. Some pay for half a year so as to make their subscription coincide with the calendar year, and there is a constant sale of back numbers. But the figures given tell a reasonably accurate story. About 150 copies are sent out with each printing as samples to non-subscribers, and 200 are held in reserve for back orders.

Another possible source of income for the *Journal* is advertising. Up to the present time no advertising has been accepted except for books and laboratory supplies. The war period has been a poor period for men to write new books or for publishers to print them, so the income from that source has been small. The firms that supply chemicals and laboratory apparatus have not had to advertise their merchandise in order to get the business.

Some members of the Executive Committee feel that the *Journal* ought to, through advertising, not only pay its way but be a revenue getter for the Association. This is, of course, impossible with the present circulation. If we had a circulation of 10,000 it might appeal to industry as an advertising medium.

Possibilities for a Larger Service for the Journal

The publication of the *Journal* by the American Association of Colleges of Pharmacy was begun in 1937. It has been printed quarterly since the beginning. It took the place of the Proceedings which was published annually. We had reached a point where the annual Proceedings did not satisfy the needs of the Association. More frequent communication between educators was needed than was made possible by the Proceedings. There was no pharmaceutical publication, including the journals of the A.Ph.A., that would publish the type of material that pharmaceutical educators need. The only procedure that would make this possible was for the Association to establish its own journal. I have edited the *Journal* since its establishment. I have tried to make it a useful, dignified publication, at the same time making it a newsy one and presenting our problems in a human way that would unify pharmaceutical educators into a family group. Especially have I appealed to the younger men who are entering the field of pharmaceutical education to take a more active part in the work of our Association and have tried to make them not only feel at home in the Association work, but to feel that they were a most important factor in it. How well I have succeeded I leave for others to tell. Both Deans Little and Kendig are qualified to speak. Dr. Swain, and Mr. Costello of the N.A.B.P., and Dr. Elliott also are.

My primary personal problem in pharmaceutical education, extending over a period of 40 years, has been to sell pharmaceutical education to the faculty, the administration, and the board of regents of

a great state university. Other deans of pharmacy have had a similar experience. In that effort we have made much headway, as is indicated by the support which pharmaceutical education is now receiving in our state educational institutions. What pharmaceutical education most needs now is some propaganda among smaller and junior colleges, and medical societies, and industrial (pharmaceutical and those related) concerns, and the libraries, both professional and public. Perhaps I should not use the word "propaganda," which always has a sinister meaning. The word "publicity" would be a better one. I find this is true in my experience. Students come to the university—they have heard about medicine, and dentistry, or some other vocation, but they have never heard about pharmacy. For years now I have made it a routine to once a year send a personal copy of the *Journal* to the president of every university that has a college of pharmacy. It is true that the school has a copy in the library, but the president never sees it and does not know of its existence unless it comes to his desk. I have also sent a copy to the president of universities which do not have schools of pharmacy, such as Harvard, Yale, University of Chicago, and Leland Stanford. It seems to me this is a dignified publicity that is very much worth while. Dean Kendig would go much farther and place each issue on the desk of the president of every pharmaceutical manufacturer, and I am inclined to think he is right. I have seen to it that certain government offices, such as the office of the U.S. Commissioner of Education, The Army Medical Library, and the Library of Congress receive all numbers, and if one goes astray, they immediately ask for replacement, which makes me feel the *Journal* has a value there. It is a question how far the *Journal* could be distributed advantageously, but that is a matter that could and should be approached and determined gradually and intelligently.

Finally there is the foreign circulation which numbers now about 40. This includes the exchanges and paid subscriptions. Paid subscriptions are now going to every school of pharmacy in Canada and a number to England, China, South Africa, Columbia, Brazil, the Argentine, Cuba, Syria, and even the Pharmaceutical Association of Palestine at Tel Aviv. No effort has been made to extend the foreign circulation, but I think it would be very much worth while to publicize pharmaceutical education beyond our borders. It seems to me that would even be worth while to do from the viewpoint of the manufacturer of medicinal products. It should be remembered that the *American Journal of Pharmaceutical Education* is the only journal published in the whole world which deals exclusively with the problems of pharmaceutical education. As such, I feel its usefulness could be extended by a dignified publicity program.

It is also my opinion it could be made more useful by more frequent publication. The amount of material available even in war time

would justify that. It seems to me if funds were made available, it would be advantageous to publish it six times a year, and eventually make it a monthly.

Lastly, the story of the *Journal* would not be complete without a mention of my personal relation to it. Unfortunately it is often spoken of as "your" or Lyman's journal. It is not. It is the official publication of the American Association of Colleges of Pharmacy. When the *Journal* was first established the Association voted the editor an honorarium of \$100 a year. This I refused for two years and finally unwillingly accepted it because the Secretary-Treasurer and the Chairman of the Executive Committee each received a similar honorarium, and I could not longer refuse it without embarrassing these other worthy officers. From the very beginning I have insisted that all the finances of the *Journal* be handled through the Secretary-Treasurers office and not through the Editor's. This has been religiously adhered to. For the twelfth year I have given my best to the editing of the *Journal*—which had to be done nights, and Sundays, and holidays. I mention this now, only because no man lasts forever, and the time will come when I can no longer serve. Then I believe it will be necessary to make some provision for editorial service. I would not mention this at all except I think it should be in our minds as we plan for the future.

I am sorry, Mr. Lawson, that this statement has been drawn out to such length. I did not seem to be able to present a fair case for the *Journal* in fewer words. If I have left anything unsaid which will be helpful to your committee in this study, I hope you will write me. From June 1st to September 1st of this year my address will be my permanent home, which is 1649 South 21st St., Lincoln 2, Nebraska. After that it will again be the University of Arizona at Tucson.

I enclose a second copy of this statement for the use of Mr. Bellis. I am sending one also to Dr. Kendig, so your committee will each be supplied.

Most sincerely,
Rufus A. Lyman, Editor

Under date of May 26, 1948, the Editor received the following reply from Mr. Lawson.

Thank you for your letter of May 4 in answer to my letter of the 29th, as well as for yours of the 17th in which you have given complete information concerning the past and present status of the *American Journal of Pharmaceutical Education*.

I can assure you that your cooperation is greatly appreciated by the Subcommittee, and that this information will be extremely useful

to us in preparing a report to the Foundation which we hope will be to the advantage of the *Journal*.

I note that you have sent a copy of your letter of May 17 to Dean Kendig, and I am sending Mr. Bellis the other carbon copy which you so kindly enclosed. The committee will now go to work on the assignment, and as soon as we have something ready to report, you will be duly notified. In the meantime we are going to get together for a thorough discussion of the situation, and if there are any other questions, we will take them up with you.

Very sincerely yours,
Fred A. Lawson

Chairman, Sub-committee of Board of Directors,
American Foundation for Pharmaceutical Education

This completes the picture concerning the status of the *Journal* at the present date. It will be noted that the breakdown of the *Journal's* income and expenditures do not cover all items of the current fiscal year, as the Treasurer's report will show, but these figures will not make any significant change from this report.

The Editor suggests the following recommendation expressing appreciation:

The Association appreciates the bequest of \$2500 made by the American Foundation for Pharmaceutical Education for the financial support of the *American Journal of Pharmaceutical Education* in the present emergency, and we are doubly appreciative of the fact that the Board of Directors of the American Foundation for Pharmaceutical Education has appointed a Sub-committee of the Board of Directors to study the needs and the possibilities of service of the *Journal* to pharmaceutical education in the years to come.

The Editor, in closing this report, wishes to acknowledge with gratitude the kindly interests of the Foundation in the *American Journal of Pharmaceutical Education* and also the fine cooperation of all of those who have had a part in making the *Journal* a dignified record of pharmaceutical education during the year.

Rufus A. Lyman, Editor

The President's Page

Shall History of Pharmacy be a Required Subject in the Pharmaceutical Curriculum?

Time is running fast, so fast, indeed, that it almost outruns our thinking and allures us into a mechanical grasping of what has just appeared on the horizon. We hurry to include the "New" in our programs in order not to lag behind.

All the more we in pharmacy are fortunate in having been presented with The Pharmaceutical Survey as an instrument for sifting and evaluating the "New" as to its necessity for the aims of pharmaceutical education. The Survey has protected us from mere mechanical grasping in this respect by making an adequate curriculum a matter of the accumulated thinking of the entirety of the American pharmaceutical educators sifted by a group of experts.

Not everything that appears to be new is really new in the sense that it has been conceived for the first time. The idea, for instance, that a pharmacist, being an academic graduate and a professionalist with great responsibilities in the service of mankind, must be a generally educated man as well as versed in all the technical aspects of pharmacy, is a rather old one. But now, this idea has been generally recognized, and it is expressed in the preamble of The Survey.

That certainly is very fine. From now on we may expect that every pharmacist who graduates from an accredited school will be an accomplished individual having the ability of expressing himself correctly and adequately in his mother tongue, and knowing something of the fundamentals of general history (the world's and the nation's), of economics and of philosophy. But are these minimum requirements of a generally educated person sufficient for the one who is simultaneously a pharmacist? Let me give a few examples.

As a generally educated person the pharmaceutical graduate has to know about the Declaration of Independence which changed this country from an English colony into a separate political unit, and to be familiar with the way in which the United States worked out its destiny. As a pharmacist he has to know about the Declaration of Independence which changed pharmacy from a subdivision of medicine into a separate profession, and to be familiar with the way in which this profession developed and stood the test of time.

A generally educated man might be satisfied with having some general idea about the industrial revolution. If he simultaneously is a pharmacist, he ought to know how this industrial revolution has influenced pharmacy. What did the patent laws and trademarks mean to pharmacy? How did the idea of the responsibility of society, as represented by the state, for public welfare in general and public health in particular develop, leading up to health insurance and how does all this affect pharmacy?

These are theoretical pleasures which we may or may not enjoy. They are of immense practical importance. We want pharmacists to take an active part in public health programs. All this certainly requires some knowledge of immunology, serology, the nature, prevention and cure of contagious diseases, of general hygiene and sanitation. But it would be too bad, if the pharmacists would know all this and nothing about just the one special aspect, that is definitely his, the pharmaceutical one.

We want the pharmacist to know about pharmaceutical ethics. Shall we teach him some ethical rules of behavior? This would be very superficial indeed and not go very deep. In order not only to give him rules which he may or may not follow, we have to imbue him with the ethical responsibilities of the profession as they quite naturally evolve from the study of this history of the profession. From the oath of Hippocrates embracing medicine and pharmacy, the French

and German oaths of the pharmacists after 1240, the date of the legal separation of pharmacy from medicine on European soil, to the codes of ethics of the Philadelphia College of Pharmacy and the A. Ph. A. is a long way. But he who is informed of it will know that professional ethics is a permanent and indispensable part of pharmacy, and it will become his proudly performed duty instead of a more or less inconvenient rule.

There are the professional relations as an important part of the pharmaceutical business. They have a long and extremely instructive history. Nobody who has not read the chapters devoted to these relations in Percival's *Medical Ethics*, written about 1800, and knows of the changes in the code of ethics of the A. M. A. dealing with this matter, can really understand what is and always has been at the bottom of these "relations."

Even as far as our laws pertaining to pharmacy are concerned, is it really enough to give the pharmacist a more or less pertinent knowledge of what he has to do or to leave alone in order to avoid imprisonment? Is it not necessary, for instance, to make him understand why he has to act the one way or the other by telling him of the events leading to the international agreement, the natural result of which in this country is the Harrison Anti-Narcotics Act?

And finally, shall we permit that this generally as well as professionally educated pharmaceutical individual of the future should experience the humiliating fact of not being able to answer questions pertaining to the history of his profession asked of him by his customers or in social contacts? That has unfortunately happened in the past again and again, and it has lead to the idea in the minds of many, even of historians in other fields of science, that pharmaceutical history consists essentially of a number of superstitious concepts of a mere curiosity value and has nothing to offer to the history of civilization at large.

It was only a short time ago that one of our leading young historians of Science, the Managing Editor of "Isis," Dr. J. B. Cohen, wrote Dr. Urdang that before getting acquainted with the latter's work, he did not know that pharmacy had a history giving it a legitimate place among the sciences and professions.

The History of Pharmacy is one of the assets of the profession. We have to make use of it. It is not sufficient to leave it to the individual schools whether or not to include courses in the history of pharmacy in the curriculum. These courses must be required. Only then can we be sure that every pharmacist will be the well educated *pharmaceutical* individual we want him to be.

Arthur H. Uhl

Replies on Pharmacy Schools in Paraguay

- 1) Facultad de Quimica y Farmacia, Asuncion, Paraguay.
- 2) Doctor Jose Esculies.
- 3) Six courses, divided into four parts for Pharmaceutical Chemist, and two additional ones for Industry or Biology.
- 4) 49 professors in all, including two titular professors, 10 ad interim, 11 substitutes, 17 holding "chairs," 1 "ad script" and 8 other assistants.
- 5) 144 students (86 women, 58 men).
- 6) Four years for Pharmaceutical Chemist, and 6 years for Industrial or Biological Chemist.
- 7) 1896, and functioned with name of School of Pharmacy. By Presidential Decree of May 9, 1938, the Facultad de Quimica y Farmacia was created.
- 8) Forming part of Universidad Nacional.
- 9) Pharmaceutical Chemist; Licenciado (licensed) in Bio-chemistry, Industrial Chemistry; Doctor in Bio-Chemistry, Industrial Chemistry and Chemistry and Pharmacy.

The Editor's Page

The Board of Pharmacy of the state of New Jersey has for a long time been devoting its attention to doing some constructive work in the education of the pharmaceutical intern. One of their studies being carried out this year requires the intern to report periodically the type of medication that is being supplied on prescriptions. A couple of reports recently published are most interesting because they indicate the general trend of modern medical practice. The effort which the New Jersey Board is making should be commended, and we hope their studies will be carried further. We would like to see them go so far as to produce a course of study that an apprentice should follow and master during his period of apprenticeship. The boards of pharmacy are composed very largely of men who have been engaged in retail pharmacy and naturally are best qualified to say what a candidate should learn about the successful operation of a drugstore—and by “successful” we mean something more than the making of money, although that is a necessary objective. We mean all those things he should learn by working in a store that will contribute to the usefulness of the store as a public health agency. Once, many years ago, I raised the question of the need of a program for the obtaining of systematized drugstore experience in one of our national meetings, and the suggestion was met with a dash of cold water. Only one man came to the support of the idea, and that was the late beloved J. Leon Lascoff, who said, “It can be done”. When that is done the period of drugstore experience will become educational, and it will be looked upon by the candidate as an educational necessity instead of a period of servitude. Drugstore experience needs to be raised to a level where it will have educational dignity. With the hundreds of fine men who constitute our boards of pharmacy there is boundless man power to do this job and do it well. When done, it will be a real contribution to pharmaceutical education and to the education of the pharmacist.

There are a lot of men in American pharmacy that I have been praying that I may live longer than they because I think no one could write obituaries for them that would do them justice as well as I can. That is not because I can write better than anyone else, but it is because I have known these men longer and more intimately than anyone else and because I have a deep affection for them and I think I can evaluate their service better than anyone else. But there is one such man I want to see live longer than I because if Dr. Robert L. Swain should pass before I do I wouldn't have him to stimulate me and drive me to my editorial tasks. I have an affection for him that is as deep as that of any of these men that I want to see die before my time. I have a tremendous respect for his brilliant mind. Some of the most enjoyable moments of my life have been to sit in the audience and study his technic and his versatility in an attack against the opponents of the Pharmacy Corps Bill. When he was through I always felt that the last word had been said.

But in matters concerning pharmaceutical education Dr. Swain is in a difficult position. Once I heard the brilliant and scholarly Dr. Gilkey, who was for several decades a leader in religious thought in the University of Chicago and throughout the country, tell a group of ministers representing many denominations that the minister of the Gospel has the most difficult task of all human beings. Every Sunday morning as the pastor enters the pulpit he finds himself face to face with a grandmother and her granddaughter sitting side by side in the front pew. The grandmother is dignity personified. She is immaculately dressed. Her dress is high collared. In color and form it is appropriate. Her prayer book lies in her lap. Her attitude is serene and reverential. By her side sits her granddaughter, a winsome lass of sixteen summers. What clothes she has on are in the most brilliant colors. Her dress is both collarless and skirtless. Her legs are stockingless; her shoes are toeless, and through the dainty openings the toe-nails are flaming red. So are the claw-like finger-nails. War paint adorns her remaining features. She left her cig-

arette stub by the door as she entered. From her bracelet dangles last night's dance program. Now the preacher's problem is to bring to grandmother and granddaughter a message that is to both inspiring, and challenging, and consoling, and satisfying—intellectually and spiritually. That places him in the most difficult position that any human being is subjected to. Dr. Swain's position in pharmacy is exactly that of the preacher's in the ministry. He faces those who would *train* people on the one hand, and those who would *educate* them on the other. And in trying to satisfy both groups he has the same impossible task that the minister has with the grandmother and granddaughter. Here are two women who have reached different levels in their spiritual growth. The same is true of the educational levels of the two groups that Dr. Swain faces. But the lower level is weakening and has been for a period of sixteen years. The whole story of the struggles of the Pharmaceutical Syllabus since 1932 brands the inadequacy of the present program for the education of the pharmacist. Dr. Swain asks, "Is the increase inevitable?"¹ Of course it is, and everyone knows it. The severest critics are constantly pointing out obsolete drugs that should be deleted from our studies, but when they mention one that should be deleted they name from two to ten new ones to take its place. And what is even worse, no one has suggested that any course be eliminated in its entirety, but they are insisting that such subjects as biochemistry and physical chemistry be added to the pharmaceutical curriculum, and rightly so. But where are they to be placed? Not only has the number of individual drugs been increased, but the time demanded for certain courses has been increased. It was at the August meeting at Toronto in 1932, the very year the four year course became officially the minimal program, Dr. Swain suggested that the amount of time allocated to dispensing should be increased on the grounds that the graduate should show a higher degree of skill. Dr. Swain suggested the time be doubled, and I agreed with him. As a result, the four year program became pregnant almost before it was

¹ *Drug Topics*, April 26, 1948.

implemented, and the tumor has been growing ever since. The time has come when the tissues and organs can withstand the tension no longer. The period of pregnancy has got to be lengthened, or the chemist or medical man will take over some more functions in the health sciences that rightly belong to the field of pharmacy. When will we pharmacists ever learn that if we are to keep pace with the other health professions we have got to discontinue the obsolete educational policy of doing too little and doing it too late?

From what has been said Dr. Swain might be considered the legitimate father of the ever-expanding educational program. I would consider it the greatest honor that could have come to me if I had been.

In the early days of my contacts with pharmaceutical education I heard it stated at practically every meeting that it was impossible to increase the educational requirements for the study of pharmacy until the state boards advanced the requirements for pharmaceutical practice. This was the time that I first recognized the need of the funerals of a lot of deans. Leadership in education, irrespective of the field, has always been the function of educational institutions and not of administrative boards. This statement was made even after the larger number of boards of pharmacy had given their whole-hearted support to every educational advancement that was made. The "go slow" slogan always came from the educational group and still does, as was evidenced by the reports of the committees on curriculum and the five year program at the 1947 Milwaukee meeting. Dr. Swain is absolutely right when he says, "The feeling is making headway that five years and possibly six will be required if the colleges are really to serve all the educational needs of the pharmaceutical profession." That this is becoming true is evidenced by the requests that the profession itself is now making. I saw it, personally, coming to the surface a number of years ago when at a meeting of District 5 at Aberdeen, South Dakota, Mr.

Frank Moudry of Minnesota introduced a resolution to the effect that he believed the time had come when the colleges of pharmacy should seriously consider the introduction of prepharmacy training. It was passed by the group without a dissenting voice. The board and school men were present in the proportion of 3 to 1. At the annual meeting of the Arizona Pharmaceutical Association at Phoenix in April of this year the Association passed a resolution without a dissenting vote requesting the University of Arizona to require one year of college work for entrance to its School of Pharmacy at the earliest possible moment. The retail druggists were present in the proportion of 300 to 2. At the joint meeting of Districts 7 and 8 at Salt Lake City in April of this year the same resolution was passed without a dissenting vote, asking that the principle be applied to all schools in these districts. The board and school men were present in the proportion of 3 to 2. That shows the trend in this western country within the profession itself. Dean H. Evert Kendig says that the attitude that "six years in college is wasted as preparation for a lifetime in pharmaceutical practice" is a fallacy. And on more than one occasion Dean Kendig has proved himself to be one of the major Presbyterian prophets.

It is really unfair that pharmacognosy should be constantly attacked as the most antiquated of all subjects in the pharmaceutical curriculum. And the facts are that those who make the attacks show their ignorance as to what the modern pharmacognosist teaches. There is no field in which there have been more revolutionary changes than in pharmacognosy. The pharmacognosists have for some time recognized the chemical-pharmacological-therapeutic approach, rather than the taxonomic or morphological, to the study of medicinal plants. In this they excell the pharmacist and the pharmaceutical chemist in wisdom. Many of the obsolete drug plants which the pharmacognosist still brings into the picture he would discard if it were not for the fact that he is forced to because many boards of pharmacy include identification as

a part of their examination. In some states it is required by the pharmacy law. Few board members have been in school recently enough to have got the modern approach to pharmacognosy. In spite of the accomplishments of modern synthetic chemistry it will be a long time probably before the plant can be discarded as a producer of the digitalis bodies or penicillin. Even though the synthetic chemist may eventually supply all drugs from the laboratory and make all the food on our tables from coal, the Creator may still have the need of retaining the plant cell to produce sugar from carbon dioxide and water in order that we may have coal, drugs and diamonds.

It is with a keen sense of satisfaction that we read of the awarding to Dean Emeritus Wortley F. Rudd the Herty Medal for outstanding contributions to science in the south and the showering upon him of honors by the University of Tampa for distinguished service. Dean Rudd's contributions to science and his profession have not been stopped by either the Potomac or the Mason and Dixon line. These contributions have been made in many ways and often from a bed of pain. But nothing has ever daunted his courage nor dimmed the vision of his idealism. It was fitting that these honors should be bestowed upon him in his beloved South. But the East, North, and West lay claim to him too. He is an All-American.

With equal satisfaction do we learn of the awarding of the Gregory Medal to Dean A. Bertram Lemon of the University of Buffalo in token of his "personification of ideals of service and integrity in the pharmaceutical profession". Dean Lemon was the unseen factor in the Commonwealth Functional Study of the pharmacist back in the middle twenties. But it was he who did the grueling technical work of that study with an accuracy that made the study such a success and laid the foundation which was largely responsible for the rapid progress pharmaceutical education made in the succeeding

decades. Dean Lemon in the years that followed has devoted his energies to the betterment of the teaching process and is today one of America's great teachers.

Few perhaps have heard, but I know everyone wants to know of the passing, through an accident, of little Sue Ann, the lovely three year old daughter of Dr. and Mrs. Heber Youngken, Jr., of the University of Washington. The pharmaceutical world wants to share the sorrow with these good parents, and with them also we will share the comfort and even the joy which will come to them through this experience, for we will find that the promises of the first Easter morning have a new meaning that comes to all who have been nailed to the cross. Little Sue Ann has risen. She lives again.

Rufus A. Lyman

DATA CONCERNING SOUTH AND CENTRAL AMERICAN SCHOOLS (continued)

Replies on Pharmacy Schools in Haiti

- 1) Universite d'Haiti, Faculte de Medecine et de Pharmacie, Ecole de Pharmacie, Port-au-Prince, Haiti.
- 2) Mr. le Dr. Marcel Herard, Dean of Faculte de Medecine et de Pharmacie. Mr. L. Dambreville: Director of Pharmacie Section.
- 3) Courses: (all are compulsory):
 - 1st year:
Botany, Chemistry, Chemical Pharmacy, Physics, Actual work in a pharmacy (he refers to it as "Stage in a pharmacy").
 - 2nd year:
Biology, Bacteriology, Chemistry, Medical Matter, Pharmaceutical Chemistry and Galenic Pharmacy.
 - 3rd year:
Chemistry, Physiological Chemistry, Medical Matter, Microscopy, Parasitology and Galenic Pharmacy.
- 4) 6 professors.
- 5) Number of students varies, this year 25.
- 6) 3 years.
- 7) School founded 21 March, 1860.
- 8) School of Pharmacy forms part of the University.
- 9) Diploma de Pharmacien (Pharmacy Diploma).

Gleanings from the Editor's Mail

I am interested in contacting some pharmacists in U.S.A. who can contribute articles to "The Indian Pharmacist" from time to time and also keep us posted with the recent advances in pharmaceutical education, industry, profession and trade. I would be obliged if you can help me in this. We shall be glad to pay the usual charges for the same.

M. L. Schroff

7, Lower Rawdon Street
Calcutta 20, India
June 7, 1940

It was a great pleasure to receive your letter of April 19th and to note its contents. I have no words to express my keen appreciation of the work you are carrying on in the interests of Pharmaceutical Education in the United States. I also wish to thank you for your acceptance of my paper on the "Role of Different Sciences in Pharmaceutics" for publication in the *American Journal of Pharmaceutical Education*.

There has been an acute paper shortage everywhere, and we also in India are passing through the same. This accounts for our not being able to publish our journal always on time and also for our cutting down the size of our journal. I hope you are receiving our "Indian Pharmacist" regularly and in case you have not received any issues, I can send you all the missing issues.

Regarding a complete list and addresses of the institutions in India that teach pharmacy, I am herewith sending you the same for your information.

1. Benares Hindu University, Benares.
2. Glancy Medical College, Amritsar, East Punjab.
3. L. M. College of Pharmacy, Ahmedabad.
4. Andhra University, Waltair.
5. Department of Chemical Technology,
Bombay University, Matunga, Bombay.
6. Government Medical College, Park Town, Madras.
7. Patna University, Patna, Bihar.

8. University College of Science and Technology,
92, Upper Circular Road, Calcutta. ,
(Here pharmacy is taught only as a special subject
for students of Applied Chemistry.)

The above mentioned are the institutions where pharmacy is being taught. Under the Government of West Bengal, a College of Pharmacy Committee has been set up to frame courses in pharmacy. The Committee has already recommended a diploma course in pharmacy and it is expected that the teaching for the licentiate in pharmacy will be started July 1948. The names and institutions where the courses will be started are not yet known, but it is expected to be known very shortly. The Committee has also recommended a four-year course after the Intermediate in Science examination of an Indian University for the Degree of Bachelor of Pharmacy. The details of this course are being worked out, and it is expected that the report will be completed within a few weeks. It will be the first course of this kind as the other courses existing elsewhere do not require more than three years of study after the Intermediate Examination in Science. I am the Chairman of this College of Pharmacy Committee and when our deliberations are completed, I shall be glad to send you the full details of the course of studies.

I must thank you for the copies of your journal which I am receiving without a break. I enjoy reading various articles which keep me in touch with the trend of thought in the U.S.A. and since India is passing through a transition stage, it is imperative that we should keep in touch with the progress of pharmaceutical sciences in the various countries.

M. L. Schroff
Editor, Indian Pharmacist

7, Lower Rawdon Street
Calcutta 20, India
May 29, 1948

I just received your letter dated April 3. I have been out for two weeks, so the letter was waiting for me on my arrival.

Thanks for all the information you are giving me, and thanks also for sending me the copy already, even without having paid yet. I will send the money order to Prof. Louis C. Zopf right today.

Two years ago I applied to be a member of your Association, but so far no answer yet. My letter was sent to Dr. Jenkins. May be they have a new regulation about not admitting universities of nations already independent, as the Philippines are now.

I know that the University of the Philippines (the government institution), belongs to your Association, but that was done before the war.

Whatever it is, I did not receive any answer at all.

Well, I thank you so much for kindness in answering my letter and for the information you give me. I hope to send you some news items in due time. We are preparing now for the opening of the school year. We will begin the classes on June 17th.

You will be surprised to know the number of students that I had last year: 1,463. Really very many. This year may be more. Of course I have accommodations and laboratory equipment for all these. Many are still rejected. It is a problem, but I try to solve it in the best way I can.

My best wishes for you and for the Association.

Fr. L. Rodriguez O.P., Dean
Faculty of Pharmacy
University of Santo Tomas

Manila, Philippines
May 14, 1948

I wish to thank you for your letter of the 21st of April and especially for the interest you show in pharmacy in South Africa. The delivery of your journal has been quite regular and no copies are missing.

Judging from the contents of your journal, I notice that your publication board is endeavoring to raise the standard of pharmacy in your country. We are faced with similar educational problems only on a smaller scale. We are also trying to raise the standard from that of a craft to one that is based on sound scientific principles.

In answer to your request for information on pharmaceutical conditions in South Africa, I will try first of all to give you some idea as to our system of training.

Any candidate after leaving school (by passing the so-called matriculation examination) is entitled either to enter on his course of training for the preliminary scientific examination if he has to wait one year for an apprenticeship, or start immediately on his apprenticeship of three years if he has been lucky enough to secure one. Before being allowed to accept an apprentice, a pharmacy must first be inspected and registered for that purpose. During his apprenticeship both the master and the apprentice have certain duties

to perform according to regulations laid down by the Pharmacy Board and the deed of contract drawn up between the master and the apprentice, which has to be registered with the Pharmacy Board. The supervision of the work of the apprentice is very strict, an inspector going round regularly for inspection.

After having served his apprenticeship the candidate starts on, or completes his course of study. The work is divided into, and controlled by, two examinations, the Preliminary (or Intermediate) and the Qualifying. For the first the student has to register in and follow prescribed courses in Chemistry, Physics, Botany and Zoology. The examinations are set and controlled by examiners appointed by the Pharmacy Board, under whose control, with extensive legal powers, all pharmaceutical matters rest. After passing his first examination the candidate proceeds to the Qualifying Course, consisting of prescribed syllabuses in Chemistry, Pharmacy and Pharmacognosy. A new addition is Physiology.

The time required for these courses is prescribed in training hours but very few candidates succeed in passing under two years. Many candidates only pass after two or three attempts. If a candidate fails three times in succession he has to take his course over again. There are six recognized training centres. At present there is a shortage of pharmacists with the result that all training centres are working to capacity. The fear that, in the near future, the number of pharmacists may exceed the vacancies is, like elsewhere, creating future problems. The difficulty of obtaining an apprenticeship acts as a controlling factor on the numbers entering the profession, but, as this alone is not considered sufficient, there is also a tendency to raise the standard in order to eliminate the weaker ones among the students. With one exception all training is done at Technical Colleges, a diploma being issued by the Pharmacy Board to any student who passes his final examination. The institution of a degree instead of a diploma is being considered. This, however, raises the question of the advisability of training pharmacists at the universities. As far as specialized courses and research is concerned, South Africa is in the pioneering stage. We rely on overseas trained experts, especially from England, whose scheme of training is more or less the pattern on which ours are based, and whose diplomas and degrees are accepted for registration in South Africa.

The pharmacists (usually called chemists, who object being called pharmacists) of South Africa are organized under the "Pharmaceutical Association of South Africa" with subsections all over the Union. Representatives from these sections meet yearly for the purpose of discussing problems of mutual interest. As already stated, the controlling Board, appointed according to statutes, has extensive powers, and under their surveillance pharmacy has been kept on a

very high level. We find it for instance very strange that your pharmacies are also dispensers of soft drinks and ice creams. To us it seems as if the idea is to create a sick department in one part in order to cater for the ailment in the next. Some time ago a representative of one of your big industrial pharmaceutical firms, after having made a tour of inspection, was asked for his impressions. Some of his unflattering remarks have caused quite a stir, but among others he stated that South Africans were not vitamin conscious. We again have the impression that Americans cannot balance a meal without a couple of vitamin tablets. Which remarks are, by the way, a form of digression and not to be taken too seriously, do not prevent me from saying that we are great admirers of American initiative and business ability, and we are prepared to profit by your experiences. We admire your courage to defy tradition if it clashes with business and scientific principles.

I notice that plenty of scholarships and fellowships are being advertised in your columns. Could some of these be made available for South Africans? The rate of exchange is against our currency together with the high cost of living prevents us from making use of your institutions for further training.

As you probably are aware, the native population in South Africa exceed the whites in a 4 to 1 ratio. The standard of living among most of them is very low and the whites are being blamed for the condition. As is usually the case, the spectators are the best advisors! Therefore, we are blamed for it through our so-called native policy. People from overseas generally change their opinions after staying for some time in South Africa, because they then only begin to realize the peculiar nature of the problems with which we are being faced. Civilization has only touched most of them outwardly. Mentally they are still in a primitive stage, and, although much is being done to improve the mental and physical conditions, the task is too big for the small white population to carry. The great problem is not to swamp white civilization by allowing the control to fall in the hands of the multitude until such time when they will be mentally sufficiently developed to face up to their responsibilities. Impoverished conditions due to a general setback in a country mainly agricultural in nature, through droughts, overgrazing, erosion, uneconomical prices (before the war), primitive methods of farming have not only affected the natives but also created a poor white problem which could never have been financed if South Africa had not been so fortunate with its gold mines. Gold and misery are bedfellows in this country of ours. Torn by racial differences, poverty seeks consolation in social and communistic reforms. All these things tend to obscure the real nature of the problem, food and education, until such time as both the natives and pioneering whites in this country have had an opportunity

of adjusting themselves to changing conditions of life. In this turmoil pharmacy has a part to play in order to alleviate the consequences of undernourishment and unhygienic conditions of living. Their fight is against quack remedies and superstition. Both the poor whites and the natives are the victims of unscrupulous trading and for that reason our Pharmacy Board has a very serious responsibility to face. We are fighting for those ideals which Europe had to fight for more than a thousand years.

According to request the following addresses are being added for your information:

The Editor of the "South African Pharmaceutical Journal" is Mr. W. Patterson, P.O. Box 6290, Johannesburg.

If you can forward copies of your journal to the Pharmacy Departments of the following training centres, I'm certain that it will help to create a bond of interest:

Technical College of the Witwatersrand, Johannesburg.
 Technical College, Pretoria.
 Technical College, Durban.
 Technical College, Port Elizabeth.
 Technical College, Cape Town.

If you are interested in any special aspect of pharmacy in South Africa, I will try to oblige. With kind regards.

D. J. du Plessis
 Department of Chemistry

Potchefstroomse Universiteitskollege vir C.H.D.
 (Universiteit van Suid Afrika), Potchefstroom
 23 5 1948

DATA CONCERNING SOUTH AND CENTRAL AMERICAN SCHOOLS (continued)

Replies on Pharmacy Schools in Bolivia

- 1) Universidad Mayor de San Andres, La Paz, Bolivia.
- 2) Dr. Hector Carvajal.
- 3) Seven offered, five being obligatory for bachelor's degree.
- 4) 14 professors (several of whom hold two "chairs")
- 5) 106 regular students.
- 6) Five years for bachelor degree.
- 7) Our Representative has been unable to determine the date on which the Pharmacy School was separated from the Medical School.
- 8) Is a part of the Greater University (Universidad Mayor).
- 9) Doctor in Bio-Chemistry and Pharmacy.

Notes and News

University of Arizona School of Pharmacy.—Mr. G. Benner Kelly has established an annual \$25 prize to be given to the student most proficient in pharmaceutical technique. Mr. Leslie Johnson has made a donation of \$100 to be used for some special purpose at the discretion of the faculty. Both donors are members of the Arizona board of pharmacy.—In the construction of the new pharmacy building, the bricklaying has reached the second floor stage.—Mr. Loren Railsback, graduate assistant, is attending the summer session at the University of Colorado.—Dean R. A. Lyman and Prof. Bernard A. Bialk attended the joint meeting of Districts 7 and 8 at Salt Lake City in April.—Dean Lyman gave the commencement address before the graduating class of the Cincinnati College of Pharmacy on June 11.

Butler University College of Pharmacy.—Thirty-five seniors were graduated at the ninety-third annual commencement exercises held on June 7.—Honors and prizes awarded to this year's graduates for scholastic achievements at the Honor Day exercises held on May 6 included the following: initiates to Phi Kappa Phi—Henry Morell, Wilbur McCarter, Vera Groh, and Imogene Piper; Lehn and Fink medal—Henry Morell; Merck awards—Vera Groh and Imogene Piper; Indianapolis Druggist's Association award—Wilbur McCarter.—The senior class was the guest of Eli Lilly and Company during the semester.—Dean Edward H. Niles and Profs. Edward J. Rowe, Arthur A. Harwood, and Robert L. Prettyman attended the meeting of District No. 4 in May in Indianapolis. Cecil Benson and Eileen O'Brien represented the school at the student branch meeting of the A.Ph.A. which was held at the same time.—New members initiated into Kappa Psi during May were Cecil Benson, Ronald Snyder, Dominic Fratura, and Marvin Kingery.—A graduate division of the Phi chapter of Lambda Kappa Sigma Sorority was formed this year with thirty charter members.—An eight-weeks summer session is being held. Two sophomore, two junior, and two senior courses are being given.

Cincinnati College of Pharmacy.—Dr. Lyell J. Klotz and Mr. Rudolph Puls of the board of trustees attended the District 4 meeting at Indianapolis in May. Dr. Klotz and Mr. Murray, Ohio State Board member from Cincinnati, were elected co-chairmen of the district for the coming year.—Graduate work leading to the Master's degree will be offered by the University of Cincinnati with pharmaceutical chemistry as the major field, beginning in September, 1948. Required

courses will be offered solely on the University campus and research projects will be directed by a joint committee appointed by the graduate school and the pharmacy faculty.—The college entertained the general public on the occasion of its annual open house on the evening of April 15, the event being sponsored entirely by the student council. Ten major exhibits featured about 75 different projects to demonstrate the many phases of the sciences comprising the "Tree of Pharmacy and its Branches". Every department of the college was in full operation for the benefit of approximately 3000 visitors.—Faculty members and their wives were the guests of the board of trustees and wives at a well appointed dinner at the Alms Hotel, the evening of April 29.—The Ohio State Pharmaceutical Association had its 69th annual convention at the Hotel Gibson in May. The college faculty, as a part of the program, conducted a symposium on Rutin. Dean Klotz spoke on the historical and therapeutic aspects of the subject; Dr. C. A. Swisher, on the chemistry; Prof. Edw. H. Plogman, on the pharmacy; Prof. J. B. Vaughn, on the assay of Rutin preparations; and Dr. Lauretta Fox, on the pharmacology of Rutin.—The juniors and seniors were the guests of Parke-Davis Company of Detroit, in May.

Columbia University, College of Pharmacy.—Mr. V. M. Orefice, '15, died on April 11 after a long illness. He had served as a trustee of the college from 1943 to 1946 and was prominent in the Italian Pharmaceutical Association. He was president of the Traveller's Auxiliary Pharmaceutical Association at the time of his death.—The graduating class participated in a trial of a modern type of board examination at the conclusion of the regular graduation examinations.—The annual meeting of the board of trustees was held in March, and the following officers and trustees elected: Dr. Marvin R. Thompson, chairman of the board; Mr. George Simon, second vice president; Mr. Fred D. Lascoff, '23, third vice-president; Dr. Moritz A. Dittmar, Ph.C. '19, Ph.D. (Berne), secretary; Mr. Edward Mazilauskas, '26, assistant secretary; Mr. Edgar S. Bellis, '13, treasurer; Mr. Calvin Berger, '16, assistant treasurer; and Mr. Irving McKesson, honorary trustee. Messrs. Fred S. Frankfurter, '99, Irving Harkavy, '25, A. L. van Ameringen, Arthur J. Kinsman and Victor Williams were elected as trustees for three year terms.—Dean Ballard represents the pharmacy faculty on the university committee appointed to plan for the inaugural ceremonies in connection with General Eisenhower's assuming the presidency of the university. As president of Columbia University, General Eisenhower is also president of the college of pharmacy.

University of Connecticut College of Pharmacy.—The entire senior class visited the Lilly Laboratories on April 12.—Eight seniors and fourteen juniors have been elected to the Mortar and Pestle Society, an organization established for the purpose of stimulating extra-cur-

ricular activities within the student body.—During pharmacy week, Dean Hewett broadcasted over two local radio stations and was the speaker at a noonday luncheon of the New Haven Lions Club.—New organizations within the college are a chemistry club and a cosmetic club.—At the meeting of District No. 1, Prof. A. A. Maier presented a paper on "Can the Collegese Offer Anything Further to Aid the Practice of Pharmacy in Rural Areas". At the banquet Mrs. Francesco Duran-Reynals, author of "The Fever Bark Tree, The Pageant of Quinine", was the speaker. Fifty representatives of the colleges and boards attended the meeting.—Because the University of Connecticut has the only state controlled college of pharmacy in New England, it realizes a responsibility to residents of that territory. Therefore the college will this year reserve space for ten percent of its freshman class from the states of Vermont, New Hampshire, and Maine. When facilities will permit, a larger proportion will be accepted from that area.—New members elected to Rho Chi are: Margaret Adams, Seymour Card, Sanford Glassman, Leonard J. Marchlewski, Herbert O. Sable, and Frederick Siegel.

Duquesne University, School of Pharmacy.—Eighty-two persons including juniors and seniors, recent graduates and faculty members, visited the Parke-Davis & Company plant early in May.—Construction of the George A. Kelly, Sr., model professional pharmacy, to be installed in Canevin Hall, will begin July 1. Formal dedication will take place in the fall.—The faculty will give a reception in honor of seniors on June 4, at the home of Prof. Howard A. Getz.—Members of Tau Chapter, Lambda Kappa Sigma Sorority, held a tea in honor of their Mothers on May 23.—The Duquesne University student branch of the A.Ph.A. will send a student representative to the convention in San Francisco in August.—University Rho Chi Day was celebrated on April 13. A special convocation was held in the new Student Lounge in the morning. There were addresses by Dr. Dwight Deardorff of the Mellon Institute, Sister Francine of St. Francis Hospital, Mr. John Adams of the Duquesne Faculty, and Miss Mary Jane Suhanin of the senior class. Dr. Kenneth Waters, dean elect of the School of Pharmacy at the University of Georgia, was guest speaker at a dinner in the evening.

University of Florida School of Pharmacy.—Twenty-six seniors were graduated in June.—The Ramsaur Award for scholarship went to Charles E. Mundell, Jr.; the Lehn and Fink medal, to John H. Holton; and the J. K. Atwood leadership award went to Mary C. Ware.—Dean Townes R. Leigh will become Dean Emeritus on July 1, or as soon as a successor is appointed. He will continue his duties as head of the chemistry department.—Betty Lankford, a senior, represented the Florida chapter at the national convention of Kappa Epsilon in Colum-

bus, Ohio, recently.—A group of 42 students visited the Eli Lilly plant in April.

Fordham University College of Pharmacy.—Dr. Rutledge W. Howard of the Lederle Laboratories, recently addressed the April meeting of the New York branch of the A.Ph.A. on the topic "A New Advance in the Palliation of Malignancy".—Dr. Robert P. Fischelis, during National Pharmacy Week, spoke to the student branch of the A.Ph.A. on "Opportunities in Pharmacy and Your A.Ph.A.". Dr. Fischelis and Dean J. H. Kidder were heard in a radio broadcast during Pharmacy Week. Their topic was "New Drugs".—During the present school year the senior class and members of the student A.Ph.A. branch visited the manufacturing plants of Lederle, Eli Lilly & Company, Parke Davis & Company, and E. R. Squibb and Son.—Dean Kidder attended the recent dedication of the A.Ph.A. Memorial Flagstaff in Washington.—The 1948 graduates were installed as life members of the Alumni Association on June 7th.—At the commencement exercises on June 9, thirty-two graduates received the bachelor's degree.—Rev. Charles J. Deane, S. J., Dr. J. H. Kidder, and Prof. A. J. White represented Fordham at the annual convention of the New York Pharmaceutical Association in June.

The George Washington University School of Pharmacy.—The Mortar and Pestle Society and the student branch of the A.Ph.A. closed the social activities of the year on April 16. During the evening, a gift of \$25 from the Alpha Zeta Omega fraternity was presented to the president of the student branch by Dean Bliven.—The intramural athletic teams climaxed the season by winning the volley ball championship of the District of Columbia in competition with similar teams from Georgetown, Maryland and the American University.—James Allen of the Gilpin Drug Company and Joseph Yantosh, president of the local group of drug manufacturers' representatives, spoke before the students recently. These talks completed the series of five lectures presented by the Traveler's Auxiliary of the District.—Dean Bliven was recently elected to honorary membership in the Travelers' Auxiliary.—Ten students were graduated at the annual convocation. George Bayer, who was graduated "with distinction" was awarded the James Douglas Goddard prize.

Idaho State College, College of Pharmacy.—Profs. Huntington, Kihara, Roscoe, and Rowland attended the joint meetings of Districts 7 and 8 at Salt Lake City in April.—Forty-five students and five faculty members visited the Parke-Davis and Eli Lilly plants in May.—The Alpha Beta chapter of Phi Delta Chi have elected new officers and taken six new men into membership.—The Simplot Phosphate Company has recently established six \$500 scholarships in chemistry for

deserving students.—President Dr. Carl W. MacIntosh was a featured speaker at the convention of the Idaho State Pharmaceutical Association at Sun Valley on June 13.—Carl C. Reidesel, a former graduate and now an instructor in physiology and pharmacology at the University of Nebraska has been added to the staff of the department of pharmacology for the coming year.—Robert Charlesworth is taking the place of Ivan Rowland on the summer session staff. The latter is attending the University of Washington's summer session. A course in the ultimate analysis of drugs has been added to supplement the courses in drug assaying.

University of Illinois, College of Pharmacy.—Recently elected new members of the Rho Chi Society are Elaine Gianas, Alyce Godshall, Marvin Graber, Fred Pearce, Virginia Rosenberger, Henry Schmidt, Verne Smallwood, Patricia Sudar, Edward Walaszek, Andrew Lasslo and Jesus Martinez. The following members of other chapters of Rho Chi who have recently transferred their membership to Phi Chapter are Noel E. Foss, Melvin Gibson, Kazuo Kimura, Tashio Noma, Shig Masuoka and Clement Stone. The student branch of the A.Ph.A. sponsored an open house on April 30. Various departments of the medical school in which pharmacy students take work, assisted in the display. Approximately 1000 persons saw the exhibition.—Dr. Frank T. Maher has been appointed professor of pharmacognosy and pharmacology and head of that department succeeding the late Dr. Elmer H. Wirth. Dr. Maher, currently on leave of absence from the University, is serving as a research associate at the Mayo Research Foundation.

The State University of Iowa, College of Pharmacy.—Honorary awards made to students during 1947-48 are as follows: Rho Chi—Edward M. Elstad, John R. Hohmann, Galer Miller, and Ilse O. Pohling; Sigma Xi—Moreswar V. Nadkarni; Phi Eta Sigma—J. Eugene Goldberg and Donald B. Johnson; Alpha Lambda Delta—Lucretia Ann Gehrke, who was also presented the University Women's Association Scholarship award; Iota Sigma Pi—Ilse O. Pohling; Sidney London Memorial Award—George W. Manderson; Scherling Prize—James W. Conine; Chehak Prize—Norman Schoonover; Lehn & Fink Gold Medal—Ilse O. Pohling; Merck Prizes—George W. Manderson and Edward Elstad; Kuever Prize—Dale H. Cronk; Teeters Prize—Karl Keck.—Prof. Louis C. Zopf has been elected to represent the college of pharmacy on the newly created University Council, whose purpose is to facilitate communications between the faculty and the president of the university.

University of Kansas, School of Pharmacy.—Dean J. Allen Reese, who is a member of the national executive committee of Rho Chi, installed the Alpha Theta chapter at the University of Colorado on

April 23. He was also the principal speaker at their All-School banquet held that evening.—Dr. J. H. Burckhalter attended the spring meeting of the American Chemical Society in Chicago.—Dr. Duane G. Wenzel spoke on pharmacy as a career at Chanute Junior College on March 31.—Dr. Ralph W. Clark assisted officers of the Kansas Pharmaceutical Association in setting up a display for the convention of the Kansas Medical Society May 11-13 in Wichita. He also spoke at Wichita East high school on May 14 and at a noon luncheon meeting of the Hutchinson Retail Druggists Association, discussing drugstore management and pricing of prescriptions.—The student branch of the A.Ph.A. held a meeting on May 19 when Mrs. Clara B. Miller, secretary of the Kansas Pharmaceutical Association, and Phm. Roy W. Jaquith, '27, secretary of the Kansas Board, answered questions concerning Kansas pharmacy submitted to them by the students.—Jack L. Beal, Desmond Gibson, Lyle B. Lathrop, and Joe Sam have been appointed graduate assistants. Anson Anderson and Philip Preble have been appointed student assistants for 1948-49. One graduate assistantship is still to be filled.—William H. Edgerton and Sam H. Johnson have been awarded Parke-Davis Fellowships for the coming year amounting to \$1500 each.

University of Kansas City, School of Pharmacy.—Announcement is made that the school has been accredited by the American Council on Pharmaceutical Education as per January 1, 1948.—The University, through the cooperation of the Federal Works Administration, has made available a 10,000 square foot building completely equipped for pharmaceutical instruction.—Dr. Willard Hoehn, formerly with the George A. Breon Company, has been appointed associate professor of pharmaceutical chemistry. Dr. Hoehn recently took a group of students on a trip to the Parke-Davis and the Upjohn plants.

School of Pharmacy, University of Maryland.—The following are the new members who were elected to active membership in the Omicron Chapter of the Rho Chi Society on April 13: Miss Ursula T. Biermacher, Roland G. Healey, Jerome Berlin, Jacob S. Meyers, John George Magiros, Leon Greenberg, Miss June Heinritz, Miss Mitzie M. Holen, Ronald E. Mendelhohn, Miss Lila Miller, Miss Gertrude J. Robson, Miss Charlotte H. Rubenstein, Jerome Schwartz, and Miss Sally D. Weinberger.—Ursula T. Biermacher, Jacqueline J. Greenawalt, Jennie Kroopnick Lieberman, and Gertrude J. Robson were initiated into the Epsilon Chapter of the Lambda Kappa Sigma Sorority on May 6. Miss Amelia C. DeDominicis, president of Epsilon Chapter and vice president of the council of the Lambda Kappa Sigma sorority, installed twelve girls into the Omega Chapter of the sorority at the School of Pharmacy of the Medical College of South Carolina on April 24. The tenth biennial convention of the sorority will be held in

Baltimore on June 23-27.—Dean A. G. DuMez attended a meeting of the National Health Assembly in Washington, D. C. May 1-3.—Dr. Amel R. Menotti, vice-president and director of research, Bristol Laboratories, Inc., Syracuse, New York, addressed the students' auxiliary of the Maryland Pharmaceutical Association on April 28. His subject was "Repository Forms for Penicillin Therapy".—The following graduate students are holders of grants from the American Foundation for Pharmaceutical Education in the School of Pharmacy of the University of Maryland: Raman C. Amin, Salvatore Joseph Greco, Roland Greig Healy, Oscar Klioze, Monte Konicov, Denial Pasquale, Miss Cecilia Hartman Perdomo, and Edward B. Truitt, Jr.—S. Manmohan Gadekar is the fellow of the Sterling-Winthrop Research Institute for the current year.—The following pharmacy interns in the John Hopkins Hospital are graduate students in the school of pharmacy: Betty K. Job, Joseph Piala, Louis M. Pope, and Vivien B. Smith.

Massachusetts College of Pharmacy.—At the commencement exercises held on June 3, thirty-nine candidates were awarded the degree of Bachelor of Science in Pharmacy and eight the degree of Master of Science in Pharmacy. The commencement address was delivered by the Honorable Arthur W. Coolidge, lieutenant governor of the Commonwealth of Massachusetts.—The annual educational trip was held this year on May 8-15. Forty-two students and four faculty representatives were the guests of Eli Lilly Company in Indianapolis and of Abbott Laboratories in North Chicago. From Chicago, the party went to Washington to visit the American Institute of Pharmacy.—On May 3, the local chapter of the Rho Chi Society held its annual meeting and dinner. Twenty-two new members were initiated. The speaker was Dr. Francis Lee Weille, distinguished surgeon of the Massachusetts Eye & Ear Infirmary and the Massachusetts General Hospital. Dr. Weille described the exacting techniques employed in the fenestration operation for the relief of certain forms of deafness.

University of Michigan, College of Pharmacy.—The fourteenth pharmaceutical conference was held in the Rackham Building on May 11. The speakers and subjects discussed were as follows: "Commercial and Legal Aspects of the Every-day Pharmacy Operation", by John H. Buttes, Executive Secretary of the Michigan Pharmaceutical Association; "Energy Release from Food", by Dr. Harold F. Hailman, The Upjohn Company; "Clinical and Pharmacological Effects of Quaternary Ammonium Compounds", Dr. Gordon K. Moe, department of pharmacology, University of Michigan; and "Small Business and the Private Enterprise Economy", Dean, School of Business Administration, University of Michigan.

University of Minnesota, College of Pharmacy.—The student branch of the A.Ph.A. celebrated the week of March 29 to April 1 as A.Ph.A. Week. Wednesday afternoon there was a Coffee Hour and Card Party in the Coffman Memorial Union. Thursday morning the Honorary H. H. Humphrey, Mayor of Minneapolis and a registered pharmacist, addressed the student body. On Thursday evening there was a banquet in the Union during which a Pharmacy King and a Pharmacy Queen were crowned with ceremony.—At commencement exercises on June 12 Akira Asano received the Ph.D. degree. His major field was pharmaceutical chemistry.—On May 15 twenty senior students from the Askov, Minnesota, high school traveled to the University to inspect the College of Pharmacy.—University President J. L. Morrill gave the principal address at the annual banquet of the Minnesota State Pharmaceutical Association on April 14.—During National Pharmacy Week the student branch of the A.Ph.A. established and maintained displays in the College of Pharmacy and the Coffman Memorial Union. During the week Dr. Charles V. Netz gave a radio talk on "Pharmacy—A Modern Career in the Health Field."—Beginning in June, 1949, all candidates for degrees will be required to pass a comprehensive examination covering the four years of work as set forth in the curriculum.—In connection with establishment of a Pharmacy R.O.T.C. at the University, Colonel O. F. Goriup, Chief of the Medical Service Corps, U. S. Army, was a campus visitor on March 17, and Major L. P. Zagelow, MSC, Medical Section, San Antonio General Distribution Depot, was a visitor on May 24-28.—Mrs. Rogers entertained the women students at a Coke party on May 17.—Dean Rogers and Drs. Netz and Soine attended a meeting of District No. 5, at Des Moines, Iowa, on May 20-21. The first two gave papers.—In district court, Dr. Ole Gisvold appeared as an expert witness for the Minnesota State Board of Pharmacy which was opposing an action requesting that vitamins be defined as nutritional supplements.—Dr. Netz appeared as an expert witness for the Food and Drug Administration in a case involving labeling of a preparation known as Powder-X.—At Cap and Gown Day ceremonies on May 13 the following pharmacy students were announced as members of honor societies or as winners of scholarships, fellowships, prizes or medals: Rho Chi Society.—Olav Braenden, Roy C. Cummelin, Charles A. Anderson, Clement J. Doran, Charles R. Ecanow, Kenneth R. Evarts, Betty Ann Hadley, Marvin G. Matthiae, Harold J. Rhodes, Muriel Saxhaug and Harry W. Turula; Phi Lambda Upsilon—Roy C. Cummelin; Iota Sigma Pi—Betty Ann Hadley and Muriel Saxhaug; Samuel W. Melendy Memorial Graduate Fellowships—Robert Doerge, Raymond Hopponen and John Schermerhorn; Minnesota State Pharmaceutical Association Scholarship and Key—Clement J. Doran; Lehn and Fink medal—Virgil A. Vergin; Wulling Club Key—William J. Rost; Kappa Epsilon Prize—Rita M. Cincoski; Rho Chi Prize—Vidar

Fladmoe; Mortar Board—Betty Ann Hadley. Thirty-four students with an average of B or better were named on the honor roll.

University of Montana, School of Pharmacy.—Gordon Bryan has been retained for another year as instructor in pharmacy and pharmacology.—Summer courses will be given during the summer months with Profs. Bryan, Hamor, and Mollett on the teaching staff.—The model pharmacy has been completely equipped and stocked, and students of pharmacy are now assisting in dispensing prescriptions for the student health service.—Researches this summer will be carried on in the drug plant garden on irradiated seeds and plants. Nine seniors graduated in June. An ultra-violet light has been installed in the basement room where the breeding stock is housed for experimental purposes. A separate animal house is in the planning for future use.—Mrs. Dr. Emil Starz has presented the pharmacy library with the fine personal library of her late husband.—At the beginning of the current year the student branch of the A.Ph.A. had a membership of 45.—Thirteen new members have been pledged to Kappa Psi. Prof. Ray S. Kelley of the Massachusetts College of Pharmacy and Grand Secretary-Treasurer of the fraternity visited the local chapter in March.—Four new members have been pledged by Kappa Epsilon.

University of Nebraska, College of Pharmacy.—Rho Chi society initiates include Dale Dicknite, Donald Ediger, Carl Glen, Rex Higley, Paul McLaughlin, Mary O'Connor, Leon Prokop and Varro Tyler.—Benjamin McCashland was elected to Associate Membership in Sigma Xi.—Ed Hung Djao, Chengtu, China, has been awarded the \$1000 Sioux Honey Association Fellowship in volatile oils.—The student branch of the American Pharmaceutical Association held its annual banquet on May 14. 275 students and guests were in attendance. The Lehn and Fink medal was presented to Hugh Bryan, and the Merck Award to Ernest Luther. The Rho Chi awards were presented to Robert Waters and Louise Mues, the highest ranking students in the freshman and sophomore classes. The banquet paid honor to the graduating class and to Helena Redford, resident pharmacist and instructor in pharmacy, who will retire on September 1.—Seven students were graduated at the close of the second semester. One of these, Hugh Bryan, will return to pursue graduate work in pharmaceutical chemistry.—Dr. D. M. Pace, president of the Nebraska Academy of Sciences, presided at the May meetings. On his retirement as president, he was elected to the council.—Dr. Pace has also been elected treasurer of the local chapter of Sigma Xi.—Benjamin W. McCashland has been elected an associate member of Sigma Xi. He has also been elected secretary of the Biological Division of the Nebraska Academy of Science for 1948-1949.—The Therapeutic Research Committee of the Council of Pharmacy and Chemistry of the American

Medical Association has made a grant of \$250 to Dr. Harald Holck to continue his study of delayed death in rats following the administration of Nostal.—Cherie Viele served as one of the four junior attendants to the May Queen at the Ivy Day ceremonies held in April.—Drs. Burt, Schwarting and Jannke attended the meeting of District 5 at Des Moines in May.—Dean Burt attended the War Memorial Dedication Ceremonies in Washington in May.

University of New Mexico, College of Pharmacy.—Dr. George M. Hocking has recently been appointed professor of pharmacognosy and pharmacology in the School of Pharmacy. As everyone knows, Dr. Hocking has had a distinguished career in the educational and industrial field and has been a prolific contributor in the field of research in his own specialty. (We welcome him to this vast Rocky Mountain area of growing schools and vigorous young men.—Editor.)

University of North Carolina, School of Pharmacy.—The Board of Trustees announced the appointment of Dr. Walter H. Hartung as Professor of Pharmaceutical Chemistry.—In competition for the twenty-five dollar prize given by the student branch of the N.C.P.A. for the best student program, Kappa Psi gave a professional "Information Please" pitting representatives of the first three classes against fourth year students. The seniors lost. The prize was won by the Pharmacy Senate by their debate "Resolved, that modern commercial practices in pharmacy are preventing its development as a profession."—Mr. R. T. Greer, wholesale dealer in botanical drugs and pioneer in the commercial distribution of pollens, of Lenoir, N. C., addressed the student body on his 54 years of experience in this interesting pharmaceutical specialty.—Dr. Coy W. Waller, class of '37 and now research pharmaceutical chemist with Lederle Laboratories, gave the outstanding scientific address of the year on "The Folic Acids and Their Antagonists." His appearance was sponsored by the Xi Chapter of Rho Chi.—Rho Chi initiated two new members, Zack Finger and J. G. Taylor, at its monthly dinner meeting in May.—H. C. McAllister, secretary of the Board of Pharmacy, addressed the student branch of the N.C.P.A. on the newly proposed regulations for the improvement of the quality of practical experience.—Lynn Blanchard won the Kappa Epsilon Award for outstanding leadership.—Dean M. L. Jacobs attended the Memorial Flagpole Ceremonies at the National Institute of Pharmacy in May.

North Dakota Agricultural College, School of Pharmacy.—Two seniors and eight juniors were initiated into Rho Chi during the spring quarter. The seminar sponsored by Rho Chi for senior students this past quarter was presented by Dr. W. H. Long from Dakota Clinic who spoke on cardiac diseases.—Thirty-two senior students were grad-

uated at the end of spring quarter.—Dean and Mrs. W. F. Sudro attended the North Dakota State Pharmaceutical Association meeting at Minot in June.—Several drugs are again being grown on an experimental basis to determine those most adaptable to the climate and soil of North Dakota.

The Ohio State University, College of Pharmacy.—Dean B. V. Christensen attended the Pharmacy Conferences on Emergency Service, the Dedication of the A.Ph.A. War Memorial in Washington, and also the Ohio state convention held in Cincinnati recently.—Dr. Earl P. Guth represented O.S.U. at the Annual Meeting of District 4 held in Indianapolis. Recently, he spoke before the Summit County Pharmaceutical Association in Akron on "Isotonic Collyria and Buffer Solutions." The Association is planning a series of such educational talks by faculty members throughout the next year.—The Province 4 meeting of Kappa Psi was held in the pharmacy building on May 22. Dr. Guth was elected Satrap for the province.—Dr. A. S. Ricolfo made a trip to the University of Illinois College of Pharmacy to examine the manufacturing pharmacy and hospital pharmacy facilities there.—Dr. Robert P. Fischelis spoke before the student branch of the A.Ph.A. on the increasing importance of the pharmaceutical profession in government services.—The pharmacy building received a much needed interior paint job during the spring quarter.—Phi Rho Alpha, underclass honorary, initiated eighteen new members recently.—Upsilon Chapter, Rho Chi, initiated five new members following the close of the spring quarter.—Epsilon chapter at O.S.U. acted as hostess chapter for the Kappa Epsilon National Convention held in Columbus April 30 to May 1. Delegates from 17 colleges of pharmacy throughout the country attended the sessions of meetings, receptions, luncheons, and tours. Founders Day was celebrated with a formal banquet at which Dr. Guth was the speaker.

University of Oklahoma, School of Pharmacy.—A group of 80 students visited Eli Lilly & Company in Indianapolis, April 24-28.—Members of the senior class were guests of the Fox-Vliet Drug Company in Oklahoma City on Tuesday, April 20. On May 5, the class visited the Alexander Drug Company in Oklahoma City and were shown how a wholesale house is administered.—The annual Oklahoma University Pharmaceutical Association spring picnic was held at Corsair Cove, May 14.—The Lemuel Dorrance Room was formally opened to the public on May 6. It is used as student meeting room, seminar room, faculty meeting room, museum, and special laboratory. The Dorrance Room contains, among other things, large portraits of Lemuel Dorrance, as pharmacy student; Lemuel Dorrance, as a man; and a replica of his diploma, the first granted by the University of Oklahoma.—Nine new members have recently been elected to Rho Chi.—

At the May commencement, 49 students were granted the Bachelor's degree and 2, the Master's.—Instruction in the summer session began on June 7, with 200 registrations.

Oregon State College, College of Pharmacy.—The seminar sponsored by the North Pacific branch of the A.Ph.A. was held at the school of pharmacy in April. The program included an address of welcome by President A. L. Stroud of Oregon State and many papers by the faculty and students and by leading druggists of the state. Plans are being made for another seminar to be held in the fall in conjunction with the celebration of the 50th anniversary of the school of pharmacy.—The joint annual banquet of Rho Chi, Kappa Psi, and Lambda Kappa Sigma was held on May 13. The principal speaker was A. C. Christensen of Eli Lilly Company. New officers were elected by the three organizations and Phillip Alexander, Richard Lahti, and Pierre Mead were presented as new initiates.—The following students have been awarded prizes for superior scholarship: Virginia Gail Downing, Natalie Ann Bunn, Helen Lucille Briscoe, Louis W. Johnson, Robert James Irish, Lee Phillips, Earl King, Huseth Blair, Isabel Pearl Taylor, Edwin G. Heinonen, and Raymond G. Heinonen.—Thirty-three degrees were awarded pharmacy students at the June commencement.—Dr. Stewart McCutcheon has joined the pharmacological staff.—Dean Crossen was a visiting lecturer at the British Columbia summer school for registered pharmacists and apprentices which was held at Vancouver in June. Dean Crossen and Profs. Forslund and Sciuchetti presented papers at the joint meeting of Districts 7 and 8 at Salt Lake in April.

University of Pittsburgh, School of Pharmacy.—At the June commencement Casmer C. Iannuzzi was graduated with Highest Honor, Robert Palchak with High Honor, and Bernard Hirz with Honor.—Mr. Iannuzzi won the Mendelson prize for the highest standing in pharmaceutical economics; the Canter prize for the highest standing in pharmacy; the Lehn and Fink medal and the Beal scholarship for the highest general average. The Beal scholarship is in memory of Dr. James Hartley Beal and provides for one year of post-graduate study.—The second annual spring conference was held on April 21. Dr. Leo Creip spoke on the evaluation of antihistaminic drugs. Prof. Leslie Ohmart of Massachusetts discussed the pharmaceutical service to the dermatologist, and Dr. Robert L. Swain spoke on fair trade, calling it a challenge to our common sense.

Philadelphia College of Pharmacy and Science.—The alumni association held its spring reunion dinner on May 27. The guest speaker on this occasion was Dr. Karl Scholz of the department of economics of the University of Pennsylvania.—Dr. Ivor Griffith has been re-elected president and Dr. Charles E. Vanderkleed and Mr. Ray C.

Held have been made members of the board of trustees.—Dr. Marin S. Dunn, on March 6, gave a lecture on his recent Caribbean tour before the Botanical Society of America.—On March 4, the following scholarships were awarded: The Alumni Scholarship to Yaeno Yorimoto; The Bridges, to Alvin F. Shinn; The Cliffe, to George MacDiarmid; the Maisch, to Daniel C. Brown; The American Foundation for Pharmaceutical Education, to Ruth Weinstock and Mildred B. Miller; the Jones, to Harold F. Zions; the Shinn, to David J. Krigstein; the Troth, to Lester S. Cohen; the Bowers, to Alfonso R. Gennaro; the Wiegand, to Calvin M. Foltz; the Williamson, to Philip H. Friedman; and the Breyer, to Mary L. Kistler, John D. Shaw, Jr., and Charles A. Fenstermacher.—On June 13, baccalaureate services for the senior class were held in the Woodland Presbyterian Church and a farewell dinner was tendered the class on the following evening by the faculty and trustees. At the Commencement on June 16, honorary degrees were conferred upon Dr. James F. Couch, Adam H. Fiske, and Lewis B. Longaker.

University of Puerto Rico, College of Pharmacy.—A recent issue of the University of Puerto Rico's *Campus Reporter* describes pharmaceutical conditions in the Island as seen by Prof. W. F. Morgan, now of the Brooklyn College of Pharmacy, when he was a young graduate in pharmacy in the hospital service during the Spanish American War.

Rutgers University, College of Pharmacy.—Marie E. Murphy, librarian, attended the convention of the Special Libraries Association held in Wahsington, June 6-12.—Dr. Robert P. Fischelis was initiated into Alpha Eta Chapter of Rho Chi as an honorary member on April 21, 1948.—Dr. Harvey Haag, Dean of the Medical School of the Medical College of Virginia, addressed the student body at a lecture sponsored by Alpha Eta Chapter of Rho Chi. The title of Dr. Haag's address was "Observations on Certain Aspects of Tobacco".—Dr. Ernest Little addressed the graduating class at Albany College of Pharmacy, Union College, on June 3.—The members of the faculty at the College of Pharmacy have affiliated with other members of the Newark Colleges of Rutgers University in organizing the Newark Chapter of the American Association of University Professors.

Medical College of the State of South Carolina.—Drs. W. A. Prout and J. Hampton Hoch attended the meetings of District No. 3 in April.—A chapter of Lambda Kappa Sigma sorority was installed on April 24. Twelve girls were charter members.—The student branch of the A.Ph.A. sponsored a pharmacy week window display in space contributed by the South Carolina Power Company.—Oliver Bagnal,

William Johnson, Jr., and Marjorie Lee are newly elected student members of Rho Chi. Dr. Alvin F. Dodds is a new faculty member.—Prof. Joseph B. Hyde is retiring from the faculty after thirty-eight years of service.—Ten seniors were graduated at the annual commencement on June 3.

University of Southern California, College of Pharmacy.—Prof. Edward S. Brady of the faculty, has been elected to membership in Sigma Xi.—Boyce Bennett, Dana Fisher, George Griffenhagen, and Sidney O. Sheridan are new members of Rho Chi.—Helen Smart and Patricia Wiedmann have been elected to Iota Sigma Pi and Helen Smart and Richard D. Tead, to Phi Kappa Phi.—The inauguration of Dr. Fred D. Fagg, Jr., as Sixth President of the University of Southern California took place on June 11. The board of trustees and the faculty were hosts for the ceremony, appearing in academic regalia, and marching from Old College to Doheny Library where the ceremony took place.

St. Louis College of Pharmacy.—A fully equipped drug manufacturing laboratory is being assembled for use in a new course in industrial pharmacy which will be introduced next September. The laboratory will cover 3,000 square feet of space and \$35,000 worth of equipment will be installed, which will include compressed tablet machines, mixing machines, granulators, tablet coating and polishing pans, colloid mills, homogenizers, pressure filters, ointment mills, and other drug manufacturing equipment. To staff the department additional instructors in pharmacy, pharmaceutical chemistry, and pharmacology will be added. The objective of the new department is to furnish trained personnel for the drug manufacturing field. A five-year course in industrial pharmacy will be given, and the graduates will receive the degree of Bachelor of Science in Industrial Pharmacy. The department will offer a one-year postgraduate course for regular pharmacy students. The course will also include a quality control section. Dr. Carl J. Klemme has joined the staff to direct the new program.—Fifty-eight persons were graduated on the occasion of the school's eighty-fourth commencement. Mr. Edward T. T. Williams, president of the Lambert Pharmacal Company was the commencement speaker. The honorary degree of Doctor of Pharmacy was conferred upon Carl F. G. Meyer, president of Meyer Brothers Drug Company and upon O. J. Cloughly, vice-president and general manager of the St. Louis Wholesale Drug Company and a former president of the Missouri Pharmaceutical Association.—A dinner was served to the classes graduating in 1888, 1898, 1923, and 1948. Three members of the 1888 class and five of the 1898 were present.

Temple University School of Pharmacy.—A two-day celebration has been arranged by the university administration and the alumni when the new building will be formally opened next fall. More than 1000 graduates are expected to participate. Symposia will be conducted devoted to such subjects as pharmaceutical education, research, community service, distribution, and the various specialties. Distinguished educators and scientists will have a part in the program and honorary degrees will be conferred upon leaders who have given outstanding service.

University of Texas, College of Pharmacy.—A total of 70 graduates received degrees at the June commencement.—Prizes for superior scholarship went to Bert Altman, Lucille Laskowski, John W. Nutley, and William Hobert Wood.—Patricia Williamson, a pharmacy student, was one of the 20 outstanding junior women tapped by Mortor Board.—Prof. Joseph Matthis of the Massachusetts College of Pharmacy is teaching inorganic pharmaceutical chemistry at Texas in the summer school.—The following are new initiates in Rho Chi: C. S. Kemp, A. Carter Beach, Carl L. Brown, James D. McKinley, Jr., James M. Arrington, David Roy Noles, Cesar Salinas, Miss Lucille Laskowski, Hernan Alvarez, Bert Altman, Joseph M. Kelly, William Hobert Wood, John O. McKinzie, Frank O. Hilburn, John W. McClure, Fara Occhipinti, Jack H. Glazer, Edward P. Brandes, and Boyce Anderson.—A new program will be offered pharmacy students beginning in September 1948. The program will embody both pharmacy and business administration courses and will lead to a combination degree of B.S. in Pharmacy and Bachelor of Business Administration. For this degree optional majors will be allowed in retailing, wholesaling, and professional sales service (detailing).—Morgan Smith, local representative for the Lilly Company, sponsored a Mexican dinner for the senior class, their wives and husbands, and members of the faculty on May 22.—The Texas Pharmaceutical Association held in Galveston in May was attended by Dean Burlage, Profs. Gidley and Neville and Misses Wood and Showalter.

The University of Tennessee, School of Pharmacy.—Two new courses for seniors, one in veterinary and one in hospital pharmacy, were offered during the spring quarter. Courses are being planned for juniors in plant hormones, in allergies, weedicides, fungicides, and insecticides.—Dean Crowe was honored by alumni and friends, April 29, at the unveiling of his portrait, painted by a distinguished artist, in recognition of his 38 years of service, 14 years as dean. The Memphis Drug Club also expressed its appreciation of his services as its secretary by the gift of a fine radio-phonograph.—Dean John F. McCloskey and Dr. Edward Ireland of the New Orleans College of Pharmacy were campus visitors in March, and Dr. Frank Eby of

Temple University School of Pharmacy was a visitor in April.—At the April meeting of the student branch of the American Pharmaceutical Association Mr. L. W. Yagle spoke on "A Time Saving Device to Aid the Making of Percentage Solutions".—Mr. P. R. Prince, C.P.A., and Mr. Fred Casey, local representative for Parke, Davis & Co., were special lecturers in economics and biological products, respectively, during the spring quarter.—The laboratories for pharmacognosy and botany, pharmaceutical preparations and dispensing, and the divisional offices have been completely renovated and air conditioned. All old microscopes have been replaced by new ones equipped with polarizing apparatus. Additions have been made to the kodachrome library.—Mr. George F. Archambault, Chief Pharmacist, Pharmacy Section Hospital Division, Federal Security Agency, U. S. Public Health Services, addressed the student branch of the A.Ph.A. at a special meeting in April, concerning the coming examination for commissioned pharmacy officers in the Regular Corps of the U. S. Public Health Service.

University of Utah, School of Pharmacy.—On May 19 new officers were elected by the student branch of the A.Ph.A. They were installed at a dinner on May 29. Dean L. David Hiner and Drs. E. A. Swinyard and Jack Orr are faculty sponsors.

Medical College of Virginia, School of Pharmacy.—Dean Emeritus Wortley F. Rudd was awarded the Herty Medal for outstanding contributions to science in the South. The award was presented at the Georgia State College for Women, in Milledgeville, on May 1. Dr. R. Blackwell Smith, Jr., attended as a representative of the college.—Dean Emeritus Rudd was awarded the degree of Doctor of Humanities from the University of Tampa on May 31.—Dean R. B. Smith, Jr., attended the exercises in connection with the dedication of the A.Ph.A. National War Memorial in Washington, on May 6 and 7.—Dr. S. S. Negus has been appointed acting administrator of the Richmond Area University Center. Dr. Negus is also the new president of the Virginia Academy of Science.—Dr. M. L. Neuroth has been attending various district meetings of the State Pharmaceutical Association. He accompanied President Rooke, and others, on trips to Lynchburg and Petersburg during April.—Blake F. Putney and Robert D. Anderson, who have been assisting with instruction in the school and hospital divisions, respectively, are planning to attend the University of Minnesota beginning in September. Mr. Putney will be an assistant in the department of pharmaceutical chemistry there.—Several members of the faculty attended the meeting of the Virginia Pharmaceutical Association at Virginia Beach, June 6-8.—Rho Chi Society elected the following new members at

its spring meeting: Elsie Dowdy, Robert D. Anderson, and John W. Martin, Jr. They were initiated at the annual banquet of the Mortar and Pestle Club and Rho Chi Society held on May 14. Carson M. Keys was presented with the Lehn & Fink Medal at the same time, and Thomas M. Kirkpatrick, Jr., received the Rho Chi award. The guest speaker at the banquet was Mr. Glenn Sonnedecker, Editor, *"Practical Pharmacy Edition of the A.Ph.A. Journal."*—Thirteen seniors graduated at the exercises on June 8.

Temple University, School of Pharmacy.—Thirty-nine senior students were conducted on an inspection tour of the Sharp & Dohme laboratories at Glenolden on April 20, as the guests of the firm and were given a dinner at the Bellevue-Stratford in the evening.—The Philadelphia Branch of the A.Ph.A. held its April meeting in the new \$2,000,000 building of Temple's pharmacy and dental schools. 150 attended the program. The speakers for this occasion were Dr. Millard E. Gladfalter, provost of Temple; Dean H. Evert Kendig; Madeline O. Holland, president of the branch; Paul W. Wilcox, secretary-treasurer; and Dr. L. F. Tice of Philadelphia College of Pharmacy and Science.

The University of Wyoming, School of Pharmacy.—The Pharmacy club recently sponsored the showing of a film entitled "Ye Olde and the New in Medical Research" produced by the Pitman-Moore Company of Indianapolis.—More than 40 students have applied for membership in the Wyoming Student Branch of the American Pharmaceutical Association and will join as soon as the charter is granted by the Association.—Because of the importance of pectin in the production of pharmaceuticals, pharmacists are interested in the research work being conducted at the University of Wyoming Natural Resources Research Institute on the extraction of pectin from sugar beet pulp.—The Pharmacy Club has voted to purchase an Honor Book which will be awarded annually at the Honor Convocation. The School already presents an Honor Book annually to an upperclassman.—Dr. David W. O'Day was the guest speaker in April at the meeting of the twelfth district of the Wyoming Nurses Association. Dr. O'Day has been made a member of a special committee to develop student awards each year for the Wyoming Section of the American Chemical Society. Applications are now being made to Dr. O'Day for scholarships to be awarded to worthy high school students for the next academic year.—Gene Peterson, a freshman pharmacy student, because of his outstanding performance as a trombonist was awarded an Applied Music Scholarship for the spring quarter by the Division of Music at the University of Wyoming.

Miscellaneous Items of Interest

Program of the Forty-Ninth Annual Meeting of The American Association of Colleges of Pharmacy

President, Arthur H. Uhl; Vice-President, John F. McCloskey;
Secretary-Treasurer, Louis C. Zopf; Chairman of the Executive Com-
mittee, B. V. Christensen.

Sunday, August 8

10:00 A. M. Meeting of the Executive Committee

FIRST SESSION

Sunday, August 8, 1:30 P. M.

1. Roll Call
2. Appointment of Committee on Resolutions
3. Appointment of Nominating Committee
4. Appointment of Auditing Committee
5. Report of the President, Arthur H. Uhl
6. Report of the Secretary-Treasurer, Louis C. Zopf
7. Report of the Executive Committee, B. V. Christensen
8. Report of the Editor of the American Journal of Pharmaceutical Education
9. Report of Credentials Committee
10. Reports of Standing Committees (Summaries)
 - (1) Committee on Relation of Boards and Colleges, Joseph B. Burt
 - (2) Committee on Libraries, Charles O. Lee
 - (3) Committee on Activities for Alumni, Linwood F. Tice
 - (4) Committee on Problems and Plans, Rufus A. Lyman
 - (5) Committee on Status of Pharmacists in the Government Service, Arthur H. Einbeck
 - (6) Committee on Pharmaceutical Research, Eldin V. Lynn
 - (7) Committee on Graduate Study, John E. Christian

Sunday, August 8, 7:30 P. M.
Room of the Dons, Mark Hopkins Hotel

Joint Meeting of the American Council on Pharmaceutical Education, The Executive Committee, American Association of Colleges of Pharmacy, The Executive Committee, National Association of Boards of Pharmacy and The Council, American Pharmaceutical Association.

SECOND SESSION

Monday, August 9. 1:30 P. M.

1. THE PHARMACEUTICAL SURVEY

Eying the Future of Effective Pharmaceutical Instruction, Dr.
Edward C. Elliott

The Survey has looked at The Pharmaceutical Curriculum, Dr.
Lloyd C. Blauch

2. Report of The Committee on Curriculum, George L. Webster
3. Report of The Committee on Five Year Curriculum, Howard C. Newton
4. Report of The Committee to Study The Question Of A Professional Degree To Be Awarded Upon The Completion Of A Curriculum Covering More Than Four Years, H. Evert Kendig
5. Report of The American Council on Pharmaceutical Education, Andrew G. DuMez

Monday August 9, 8:00 P. M.

Joint Session of The American Association of Colleges of Pharmacy, and The National Association of Boards of Pharmacy.

PANEL DISCUSSION

"Educational Value of Practical Experience"

Moderator—Frank W. Moudry

Legal Aspect.....	P. H. Costello
College Viewpoint.....	Earl R. Searles
Boards Viewpoint.....	W. R. Powers
Retailers Viewpoint.....	Max Lemberger

THIRD SESSION

Tuesday, August 10, 1:30 P. M.

Reports of Special Representatives:

1. Delegates to the American Council on Education, Noel Foss
2. Representatives to the American Council on Pharmaceutical Education, Ernest Little
3. Representatives to the National Drug Trade Conference, J. Lester Hayman

4. Delegates to the House of Delegates of the American Pharmaceutical Association, Glenn L. Jenkins
5. Representatives to the National Wholesale Druggists' Association, Henry S. Johnson
6. Directors of the American Foundation for Pharmaceutical Education, H. Evert Kendig

Recommendations from Teachers Conferences

Report of Historian

Report of Special Committees:

- A. Committee on Predictive and Achievement Tests, Ralph F. Voigt
- B. Committee on Professional Relations, Perry A. Foote
- C. Committee on Personnel Problems, J. Allen Reese
- D. Committee on Teachers Conferences, J. B. Burt
- E. Committee on World Congress for Pharmaceutical Education, George Urdang
- F. Committee on Application of Educational Techniques Used in the Armed Forces, Donald C. Brodie

Report of Committee on Resolutions

Report of Auditing Committee

Miscellaneous Business

Election of Officers

Address of the New President

New Business

Executive Session

Adjournment

CONFERENCE OF TEACHERS OF PHARMACY

Chairman: Allen I. White

Vice Chairman: Leslie Ohmart

Secretary: W. Lee Huyck

Representative on the Committee of Conference of Teachers: Edward A. Brecht

Monday, August 9, 9:30 A. M., Room

Chairman's Address, Allen I. White

Secretary's Report, W. Lee Huyck

THEME: Report of the Committee on Instruction in Pharmacy of the Pharmaceutical Survey

1. Introduction, Lloyd E. Blauch
2. Pharmaceutical Calculations, Allen I. White
3. General Pharmacy I and II, Louis W. Busse
4. Dispensing Pharmacy, W. Paul Briggs.
5. Open Forum, led by Leslie M. Ohmart

CONFERENCE OF TEACHERS OF CHEMISTRY

Chairman: Lloyd M. Parks

Vice Chairman: Lloyd E. Harris

Secretary: Ray S. Kelley

Representative on the Committee of Conference of Teachers: H. G. Hewitt

Monday, August 9, 9:30 A. M., Room.....

- (a) Call to Order
- (b) Report of the Chairman
- (c) Appointment of Nominating Committee
- (d) Organic Chemistry: A Symposium
 1. The Scope and Content of an Undergraduate Course or Courses in Organic Pharmaceutical Chemistry—Paper by Henry S. Johnson; Discussion by Joseph D. Matthes
 2. Teaching the Chemistry of Organic Medicinal Products
 - a. Didactic Instruction—Paper by LeRoy Keagle; Discussion by Paul J. Jannke
 - b. Laboratory Instruction—Paper by Ole Gisvold; Discussion by Haakon Bang
- (e) The Pharmaceutical Survey Report on the Teaching of Chemistry, George L. Webster
- (f) Unfinished Business
- (g) New Business
- (h) Report of Nominating Committee
- (i) Installation of New Officers
- (j) Adjournment

CONFERENCE OF TEACHERS OF BIOLOGICAL SCIENCE

Chairman: Martin S. Ulan

Vice Chairman: Arthur E. Schwarting

Secretary: Curtis H. Waldon

Representative on the Committee of Conference of Teachers: Ralph F. Voigt

Monday, August 9, 9:00 A. M. Room

Chairman's Address, Martin S. Ulan

Secretary's Report, Curtis H. Waldon

OPEN FORUM DISCUSSION: The Pharmaceutical Survey Report on the Teaching of Pharmacognosy and Pharmacology

**CONFERENCE OF TEACHERS IN PHARMACEUTICAL
ECONOMICS**

Chairman: Thomas D. Rowe

Secretary: Charles W. Bliven

Representative on The Committee on Teachers Conference: Joseph H. Goodness

Monday, August 9, 9:00 A. M., Room

1. Chairman's Address, Thomas D. Rowe
2. Secretary's Report, Charles W. Bliven
3. Panel Discussion on "Pharmaceutical Economics in the Pharmaceutical Curriculum," with particular reference to the report of the Pharmaceutical Survey Committee on Pharmacy Administration

Moderator: Paul C. Olsen

Panel Members: Louis D. Bracken, George E. Crossen, James S. Hill, A. F. Schlichting, Arthur P. Wyss

4. Election of Officers, and representative to The Committee of Teachers' Conferences

CONFERENCE OF TEACHERS OF GRADUATE INSTRUCTION

Chairman: Ole Gisvold

Vice Chairman: R. Blackwell Smith, Jr.

Secretary: Lloyd E. Harris

Representative on the Committee of Conference of Teachers: John E. Christian

Monday, August 9, 9:00 A. M., Room

1. Chairman's Address, Ole Gisvold
2. Organic Pharmaceutical Chemistry on the Graduate Level—Paper by Walter H. Hartung; Discussion by Dr. Bauer
3. Graduate Study in Pharmaceutical Chemistry at The College of Pharmacy, University of Washington, by Dr. Louis Fischer and Dr. Arrigoni

JOINT MEETING OF TEACHERS CONFERENCES

Tuesday, August 10, 9:00 A. M., Room

Joseph B. Burt, Chairman, Committee on Teachers' Conference, presiding

Individual Teachers' Conferences will report on their discussion of
The Pharmaceutical Curriculum by The Pharmaceutical Survey
Open Forum

11:00 A. M.

Address: The Future of Student Personnel Work in Pharmacy, Dr. H. H. Remmers

Program of the Twenty-Fifth Annual Plant Science Seminar

The Twenty-Fifth Annual Plant Science Seminar will meet for four days, August 2 to 5, 1948 (the week preceding the San Francisco conventions of the A.Ph.A., A.A.C.P. and allied organizations) at the College of Pharmacy, University of Washington, in Seattle, Washington and at Paradise Lodge, Mount Rainier National Park, Washington.

The following papers will be presented as a part of the program on the University of Washington Campus.

Theme: "The Application of Certain Principles of Plant Physiology to the General Course in Pharmacognosy".

- (1) "Plant Physiology as Taught to Undergraduate University students", Dr. Margaret Dyar, University of Washington. Dr. Dyar will review the highlights of material in Plant Physiology that would serve as a background for the application of this subject to Pharmacognosy.
- (2) "Material in Plant Physiology That Can Be Made Applicable to Problems in Pharmacognosy", Dr. George B. Rigg, University of Washington. Dr. Rigg will discuss briefly such topics as chlorophyll, anthocyanins, photosynthesis, seed germination, natural and synthetic plant hormones.
- (3) Discussion: "The application of plant growth regulators to problems in pharmacognosy research." Led by Dr. H. W. Youngken, Jr., University of Washington.
- (4) "The Cytochemical Mechanisms of Action of Certain Antibiotics", Dr. Robertson Pratt, University of California. Dr. Pratt has been engaged for several years in antibiotic research and publication. His paper will deal with chemical mechanisms of penicillin action as well as those of other antibiotics and will be illustrated with the aid of kodachrome slides.

- (5) "Has Valerian Been Underestimated?", Dr. Heber W. Youngken, Sr., Massachusetts College of Pharmacy. Dr. Youngken has a short but timely paper on this valuable plant drug.
- (6) Laboratory demonstration and examination of stained pollen slides, Dr. Edward P. Claus, University of Pittsburgh. Dr. Claus will discuss and demonstrate with kodachrome slides the preparation of pollen micro-slides and methods of pollen identification. He will show how this material can be applied to laboratory work in the general pharmacognosy course.

An outstanding feature at Paradise Lodge will be a botanizing trip and tour of the Mountain to be led by Dr. E. T. Bodenberg, Park Botanist. Dr. Bodenberg is well versed in the flora of Mount Rainier National Park. The Seminar is fortunate indeed to have his services for this study. There are many points of interest including panoramic views, curio shops, and trails for those who do not wish to take the botanizing trip.

The final business session will be held at the Lodge on the morning of August 5.

American Institute of the History of Pharmacy

A.Ph.A. Section on Historical Pharmacy

Program Third Joint Session
Thursday, August 12, 2:00 P.M.

to be presided over by the officers of the
American Institute of the History of Pharmacy

President: Arthur H. Uhl

Director: George Urdang

I. Scientific Part:

1. Dean Luis Torres-Dias—Highlights of the Early History of Puerto-Rican Pharmacy.
2. Dr. George Urdang—The Precedents of the N.A.R.D. and Its Founding Fifty Years Ago.
3. Dr. C. C. Albers—Fifty Years of History of the University of Texas, College of Pharmacy.
4. Mr. Walter Cousins, Jr.—Pharmacy's Construction Days in the South.
5. Dr. Kenneth Redman—Why Study History of Pharmacy?
6. Dr. George Urdang—Jons Jacob Berzelius and Pharmacy, a contribution to the centennial of the death of Berzelius.

7. Miss Alice-Esther Garvin—The History of the Connecticut Pharmaceutical Association.

II. Business Part:

1. Report of the President, Dr. Arthur H. Uhl.
2. Report of the Treasurer, Mr. Sylvester H. Dretzka.
3. Report of the Director, Dr. George Urdang.
4. Miscellaneous.

The Pharmaceutical Survey—Doings and Decisions

Washington, D. C., July 16—The Pharmaceutical Survey is about ready to make delivery of the first of its finished goods, produced after two years of steady work upon the stuff of the profession of Pharmacy. Director Edward C. Elliott is scheduled to make three important addresses next month at the San Francisco meetings of the American Association of Colleges of Pharmacy, the National Association of Boards of Pharmacy, and the American Pharmaceutical Association. There he will discuss the factual evidence, assembled by The Survey, and resulting in a series of important recommendations for action.

Among the proposals now being considered by the National Committee on The Pharmaceutical Survey and its Subcommittees are:—the establishment of a commission on pharmaceutical manpower; the preparation and regular publication of a national roster of American pharmacists; the holding of a national convention on pharmaceutical legislation; the creation of a full-time executive officer for the American Council on Pharmaceutical Education to be known as the Commissioner of Pharmaceutical Education; the qualitative classification of accredited colleges of pharmacy; ways and means for the improvement and the increase in the number of qualified members of faculties of the colleges of pharmacy; the establishment of teaching fellowships for the purpose of enabling individuals of ability and professional promise to become especially fitted for teaching service; the increased utilization of intelligence and aptitude tests, and of guidance and counseling services by colleges of pharmacy for the purpose of insuring better quality of students; the better organization, functioning and support of state boards of pharmacy; the complete reorganization of the prevailing system of examination for licensure by state boards; the radical improvement of the administration of practical experience for licensure, otherwise

its abolition; the responsibility of pharmaceutical commerce and industry for the adequate financing of the professional training institutions of pharmacy; concentrated and organized efforts for the betterment of the existing four-year curriculum of the colleges of pharmacy; plans for the extension to six years of the period of education and training for fully qualified professional pharmacists with the degree of Doctor of Pharmacy.

Since the beginning the national committee in general charge of the policies, procedures and results of The Survey have held eight meetings of two days each. A special Editorial-Screening Subcommittee has been engaged in a careful review of the first group of the findings and recommendations. These will be presented for final action at a meeting to be held on September 26-27.

The Editorial-Screening Subcommittee, consisting of Dr. George D. Beal, Commander W. Paul Briggs, Dean A. G. DuMez, Dr. Robert L. Swain, Dr. Frank O. Taylor, and Dr. E. L. Newcomb, met on July 12-13, giving its main attention to the findings of the Prescription Study based upon a comprehensive analysis of more than 13,000 present-day prescriptions; and to the proposals relating to the modifications of the program of education and training in the colleges and schools of pharmacy.

Following the meeting of the subcommittee, Director Elliott said, "The first stage of The Survey has taken longer than planned. This has been due to the great volume of factual material brought together and requiring complete and cautious analysis. Furthermore, the committee on The Survey has taken its job seriously and has been determined to use whatever time was necessary to examine and to weigh the facts before reaching conclusions. During my time I have worked with more than twenty educational and scientific survey commissions. The Committee on The Pharmaceutical Survey stands by itself in the efforts to meet its responsibilities.

"All of us are constantly aware that the primary purpose of The Survey was the preparation of sound programs of action for the protection and promotion of the interests of pharmacy as a profession serving the public welfare. The members of the committee want to be certain that the approved recommendations for action are both workable practically and worthwhile professionally.

"The original plan of The Survey provided for a two year period of gathering and interpretation of the facts. This was to be followed by a year of implementing the conclusions. In reality certain of the implementation activities have been going on for some time.

Already through active cooperation important steps have been taken by the American Association of Colleges of Pharmacy, the Naational Association of Boards of Pharmacy, and the American Council on Pharmaceutical Education based upon the suggestions of The Survey. All this has taken time and effort but, I am convinced, time and effort well spent.

"As the work has proceded, I am hopeful that The Survey will be recognized as having added to the strength, the spirit and the stability of Pharmacy. The San Francisco meetings will provide opportunity for some decisive testing."

Edward C. Elliott, Director.

A.Ph.A.* War Memorial Dedication Ceremonies

To the many representatives of all phases of pharmacy in attendance at the meetings held in Washington, D. C., this brief review of the events serves to remind them of two memorable days—May 6 and 7, 1948. For those unable to be present, no such summary of events could adequately describe the dignity and solemnity of the occasion.

We are deeply indebted to the committee in charge for a program beautifully conceived and perfectly executed.

On May 6, the meetings were held in the lecture room of the National Academy of Sciences under the able leadership of Dr. George D. Beal.

Dr. D. V. Bronck, chairman of the National Research Council, opened the meeting by reviewing the history of the Council and discussing the many phases of its activity with respect to the Armed Forces, in times of peace. The research function and the integration and synthesis of sciences, both natural and social, were effectively outlined.

Rear Admiral C. A. Swanson, Surgeon General of the Navy, stressed the mission of proper medical assistance in keeping men well and healing the sick. He pointed out the recognition given pharmacy in the Navy and the plans for further development of pharmacy in this branch of the service.

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The Surgeon General of the Army, Major General R. W. Bliss discussed the value of teamwork between all professions and its results in World War II. The use of such cooperative endeavors is to be broadened and medical service of the most efficient type will be developed. The opportunities for commissions in the Medical Service Corps and the development of the Army Medical Department Hospital Formulary emphasized the role of pharmacy in this branch of our Armed Services.

Major General Malcolm C. Grow, Air Surgeon of the Armed Forces, discussed the new needs of medical services in light of the newly developed types of air craft. The new professional needs for warfare as it affects both medical and civilian participation was outlined.

This concluded the morning session and all delegates adjourned to an excellent luncheon served in the beautiful A.Ph.A. Headquarters Building.

After luncheon, Sylvester H. Dretzka, president of the A.Ph.A., called the meeting to order to hear as the first speaker, J. Donald Kingsley, review the accomplishments at a recent meeting of the National Health Assembly. The results of this meeting far exceeded the hopes of the organizers. Despite many different points of view, they agreed upon the following general medical care plans:

- 1) That every American has the right to the best available medical care.
- 2) Some form of insurance seems the best method of obtaining such care.
- 3) Each community and state should determine the kind of medical plan best suited for their citizens.
- 4) It was agreed that some kind of support out of general tax funds is necessary for an adequate health program.

The success of this meeting typified the best of democratic procedures in allowing our people to sit down and work out problems under our free enterprise system.

Dr. Lenoard A. Scheele of the U. S. Public Health Service ably discussed the progress and results in coping with communicable and degenerative diseases. The need for more public health in pharmacy and more pharmacy in public health was urged. In closing the speaker reviewed the opportunities for eligible young men and women in public health services.

Dr. Philip S. Owen, executive director of N.R.C.'s Committee on Atomic Casualties reviewed facts concerning casualties in the Japanese bomb explosions. The need for a long range research program for a better understanding of the effects of gamma and infra-red rays in war and, far more important, the use of isotopes in peace was advised. He pointed out the need for adequate methods of treatment of thousands of burns in small areas as a responsibility of medicine and pharmacy.

The present status of the role pharmacists should play in developing further peace time interests in the blood bank program of the American Red Cross was ably presented by Admiral Ross T. McIntire, Administrator of this program.

Major General Lewis B. Hershey, director of the Office of Selective Service, outlined the problems of the past and the needs of the future in satisfying manpower needs of our Armed Forces.

The afternoon program was brought to a close by Dr. Richard L. Meiling of the Council on National Emergency Medical Services. The needs for proper reorganization of health, sanitary and medical services to meet the needs of modern warfare were discussed.

Representatives of educational institutions met at an informal dinner held at the Ambassador Hotel. After the dinner Dr. E. C. Elliott and Dr. Lloyd E. Blauch presented some important phases of the Curriculum Survey which is to appear in The Pharmaceutical Survey results.

At 11 A. M. on May 7, all representatives gathered at the A.Ph.A. Headquarters for a most impressive ceremony to dedicate the National War Memorial to all pharmacists having served in the wars of our country. The threatening weather required the speaking part of the ceremonies to be held in the Headquarters Building. Presiding over the ceremonies was Dr. Robert L. Swain, chairman of the Dedication Committee. Chief of Chaplains. Major General Luther D. Miller, delivered the invocation followed by Deputy Chief of Staff of the Army, General J. Lawton Collins. The General paid tribute to the brave men who gave their lives to our country. Pharmacy and pharmacists were praised for the service rendered to the Armed Forces.

Dr. H. A. B. Dunning, donor of the Memorial, stressed the role of pharmacists on the battlefield as well as on the home front. He then presented the War Memorial to the A.Ph.A. To accept this gift Dr. Robert P. Fischelis responded for the Association. Dr. Dunning in closing the ceremonies in the building presented the United States

flag. A military color guard marched with the flag to the site of the Memorial. The United States Navy Ceremonial Band played before the assembled group as the colors were raised. This concluded the ceremonies and guests viewed the beautifully sculptured bronze drum which joins the Association's Memorial flagstaff. This circular drum depicts the services of pharmacists in the Wars of 1776, 1861, 1898, 1917 and 1941. Among the soldiers wearing uniforms of these various conflicts are found scattered chemical formulae and laboratory apparatus, as well as plans, ships, and other symbols of war.

The Memorial is most beautiful in its own right but placed in the vicinity of our dignified and beautiful Headquarters Building furnishes a scene most impressive to spectators and inspiring to all pharmacists.

After the Dedication Ceremonies the group gathered at the Mayflower Hotel for luncheon and the final meeting. Dr. George D. Beal acted as presiding officer. Rear Admiral R. W. Paine of the Executive Committee of the Munitions Board told of plans and needs for stockpiling and industrial mobilization in relation to our military needs.

The Honorable Kenneth Johnson, general counsel of the National Security Resources Board sketched the importance of the pharmacist in Civilian Defense and in the Armed Forces. He reminded us that everyone and everything must be considered a national resource. We were told that while World War II was a war of supplies any future conflict must be won by a deluge of production.

Dr. Perrin H. Long of the Office of Civil Defense Planning discussed the plans for organization of all public health groups, including an A.Ph.A. representative, on the Medical Advisory Board Committee. All medical aspects of Civilian Defense planning will originate in the formation of policies by this group.

The two day meeting was brought to a close by Dr. Robert P. Fischelis. He stated that this meeting was designed to acquaint us with a background of what was going on in Washington toward the end of preparation for any eventuality which we may face. Dr. Fischelis urged that each of the delegates rededicate himself to American Pharmacy, its objectives and its ideals.

As we experienced the privilege of attending this two day session I am certain that, although sobering in many respects, it was indeed satisfying to reflect upon the vast amount of intelligent thought

which is being given to the problems of the future. While the need of preparedness was evident, I feel certain that the hopes and prayers of each of us were for a future in which such preparedness measures need not be called into use.

I am confident that each of us left the beautiful city of Washington and particularly the impressive building and surroundings of the A.Ph.A. Headquarters with a renewed faith in our profession and its leadership, and with a sense of rededication to the honors and obligations of Pharmacy.

H. G. Hewitt,
University of Connecticut.

National Health Assembly

The following statement has been approved for inclusion in the Report of Section I of the National Health Assembly, considering the question "What is the Nation's Needs for Health and Medical Personnel?":

In determining the nation's need for health and medical personnel, consideration must be given to the need for pharmacists—a health group which practices its profession in hospital and other institutional pharmacies, in drug manufacturing laboratories and in more than fifty thousand pharmacies or drug stores strategically located throughout the United States in a ratio of one per 2700 (approximately) of the population. More than ten million people visit these establishments each day.

About 85,000 pharmacists are licensed in the 48 states and the District of Columbia. Of these a sufficient number is available to supply about 1.5 pharmacists per pharmacy. Considering the hours per day during which pharmaceutical service is expected to be available and the fact that the pharmacy laws of the several states require a licensed pharmacist to be in charge of a pharmacy at all times, at least 100,000 pharmacists would be needed to provide the services demanded by the public.

An annual replacement of between 2500 and 3000 pharmacists is required to cover losses by death and retirement for various causes.

Enrollment in colleges of pharmacy for the academic year 1934-35 was 7154 and the number of graduates 1428. Ten years later the

enrollment was 4144 with 604 graduated. Beginning in the fall of 1946 enrollment increased to 16,000 and rose to nearly 18,000 in 1947.

To ascertain the actual needs and to avoid the evils stemming from both under-supply and over-supply, a national pharmaceutical survey has been in progress for nearly two years and will be completed shortly.

The complex nature of modern drugs with the dangers accompanying their indiscriminate use calls for adequate protection of the public at the point of sale. This can only be supply by well educated, ethical and public spirited pharmacists keyed to cooperate with public health agencies in making known to prospective buyers the limitations of self-medication and the availability of good diagnostic and treatment facilities.

Support of pharmaceutical education is being provided to a laudable degree by the drug industry through the American Foundation for Pharmaceutical Education. Additional funds from public or private sources are needed however, especially to provide for graduate training for research workers and teachers of pharmacy, the supply of which has been reduced to a dangerously low level.

Andrew Grover DuMez

1948 Remington Medalist

Announcement is made by the Committee on Award that Dr. A. G. DuMez has been designated number 26, in the line of distinguished men who have been admitted to the Remingtonian Fellowship.

As one studies the record of accomplishment of this distinguished individual the feeling grows within that here is the man who has been the king pin of American Pharmacy for close on to three decades. It took three typewritten pages for the Information Service of the American Pharmaceutical Association to hit the highlights of his career and then those of us who have lived with him through the years know the half has not been told. His record places him in every movement for the betterment of our profession in America. More than that, it makes him an international figure. The Committee indicates that the award was made "specifically as a recognition of his services as secretary of the American Council on Pharmaceutical Education" although "his general prominence in the fields of education and

research also qualify him as a recipient of the medal." What the committee failed to state was that he was both the father and the mother of the Council, he was the obstetrition at its birth and has been its guardian ever since. Dr. DuMez has been the soul of the Council. He has not made it a policing agent but an educational institution. By the use of rare judgment and good common sense he has carried it through the vicissitudes of peace and of war with results that are amazing. With Andrew Grover DuMez's hand on the rudder we are assured of fairness and efficiency. Although in his religious affiliations he is one step below the Presbyterians, fate having made him a Congregationalist, no man will wear the Remington mantle with more dignity, or more worthily or more humbly, which is the earmark of greatness.

Rufus A. Lyman

New Books

Pharmacology and Therapeutics in Nursing. By Marion Sylvester Dooley, A.B., M.D., Professor Everitus of Pharmacology, College of Medicine, Syracuse University and Josephine Rappaport, R.N., B.S., Assistant Chief, Nursing Education, Veterans Administration Hospital, Alexandria, Louisiana, formerly Director of Clinical Education, Syracuse University Hospital 1948. First edition, 444 pages. 26 illustrations. McGraw-Hill Book Company, Inc. Price \$3.75.

With the development of medical science, the intelligent understanding of the use of drugs in the treatment and prevention of diseases by all groups that have a part in medical work becomes increasingly important. Many years ago Dr. W. W. Charters who conducted the functional study of the pharmacist, pointed out clearly that the safety of the patient against disease both from the preventative and curative standpoint depended upon the pharmacists having more, not less knowledge. The same principle applies equally as well to the nursing profession. In the present volume the authors are to be commended for the clear and fascinating way they have set forth the principles as they apply to the field of practical nursing. Much is being said in these latter days about the need, in fact the necessity, of informing the layman of the significance of scientific discoveries and their application to the problems of everyday life. The same need is of just as great importance in the related health professional fields. The authors have fulfilled this objective to a remarkable degree. The publishers too, have done a good job in supplying good materials in these trying days of the publishing business.—R. A. L.

Latin for Pharmacy Students. By Horace J. Fuller, PhC., Ph.B., B.A., Assistant Professor of Economics, University of Connecticut, College of Pharmacy. 1948 Revised edition. 78 pages. Lithographed, Edward Brothers, Inc. Price \$1.50.

The reviewer is no exponent of courses in Latin for pharmacy students any more than he is an exponent of eighth grade arithmetic for pharmacy students under the glorified heading of pharmaceutical mathematics. Principles of both Latin and arithmetic should have been mastered long before the student reaches the college professional level. However he will grant that simple texts showing the application of these subjects to the specific problems of writing and compounding prescriptions are useful and helpful to the student when their applications are needed in every course in the pharmaceutical curriculum. The present volume serves such a useful purpose.—R. A. L.

Collectanea Pharmaceutica Suecica. Edidit Kungl Farmaceutiska Institutets Bibliotek, Stockholm. Vol 11, 1947.

This is a collection of reprints of the important Swedish pharmaceutical publications appearing in 1947. The first volume contained the articles appearing in 1946. Some of the papers appear in English but most of them in Swedish but always accompanied by an English abstract.—R. A. L.

Journal of the Pharmaceutical Association of Siam. Siamese-English edition. Editorial Office, Pharmacy Building, Chulalankarana University, Phya Thai Road, Bangkok, Siam. Annual subscription \$4.00.

This Journal which has just come to the Editor's desk, is the bi-monthly publication of the Pharmaceutical Association of Siam. It is printed in both Siamese and English. It is rich in the history and the description of industries and the medicinal vegetation of Siam. Reading it opens up a new world in pharmaceutical possibilities.—R. A. L.

Harofé Haivri. The Hebrew Medical Journal—Moses Einhorn, M.D., Editor. Volume 1, 1948. 983 Park Avenue, New York 28, N. Y. Other issues of this publication we have mentioned before. We mention the journal again because it is published primarily for the interest of the Jewish medical profession in Palestine, a country which in these latter days has become a primary concern of the world. So has its diseases and its pharmacy. This issue is rich in its descriptions of Palestine's current infections, the story of the Hot Springs of Tiberias, the Baths of Tiberias at the present time and

phases of historical medicine and pharmacy of interest to the historically minded. Incidentally, it has been impossible to get the last two issues of the *American Journal of Pharmaceutical Education* through to our subscribers in Palentine because of the refusal of the post office to accept second class mail to that area.—R. A. L.

VA Pamphlet 7—4.1. Occupational Outlook Information, Long-Range Employment Prospects by State and Region, *Pharmacists*, Veterans Administration, Washington 25, D. C.

This pamphlet has been produced by the Bureau of Labor Statistics by the U. S. Department of Labor for the guidance of advisors of veterans anticipating pharmacy as a vocation. The information given will be of value to all persons planning on entering pharmaceutical work.—R. A. L.

Economic Botany. Edited by Edmund H. Fulling of the New York Botanical Garden. Published quarterly. Price \$5.00 per year. Single copies \$1.50. Address Economic Botany, New York Botanical Garden, New York 58, N. Y.

This is a new journal, publication having begun in 1947. Its contents are devoted to applied botany and plant utilization. The issues so far have carried a fair share of space on medicinal drug plants. With Dr. Heber W. Youngken of the Massachusetts College of Pharmacy as one of the advisory editors, we can rest assured it will become an indispensable publication in the pharmaceutical field.—R. A. L.

DATA CONCERNING SOUTH AND CENTRAL AMERICAN SCHOOLS (continued)

Replies on Pharmacy Schools in Argentina

Rosario

- 1) Escuela de Farmacia y Bioquímica de la Universidad Nacional del Litoral, Rosario, Argentina. Santa Fe 3100, Rosario.
- 2) Dr. Emilio P. Navarini, Director of the School.
- 3) Courses and subjects:
 - 1st year:
Inorganic Chemistry and Mineralogy, General and Special Botany, Applied Physics, Special Zoology.
 - 2nd year:
Hygiene and Microbiology, Organic Chemistry (first course) Pharmacognosia.
 - 3rd year:
Organic Chemistry (second course), Qualitative Analytical Chemistry, Pharmaceutical Technique (1st part).
 - 4th year:
Quantitative Analytical Chemistry, Pharmaceutical Tech-

- nique (2nd part), Bromatology, Analytical Chemistry Organic medicines).
Bromatology, Analytical Chemistry (Organic medicines).
- 4) 13 titular professors.
 - 5) 450.
 - 6) Four years—with two additional years for Doctorate.
 - 7) 1922.
 - 8) The School of Pharmacy and Bio-Chemistry forms part of Universidad Nacional del Litoral.
 - 9) First course: Degree offered is "National Pharmacists."
Second course (two additional years): Doctor in Bio-Chemistry and Pharmacy.

Buenos Aires

- 1) Facultad de Farmacia y Doctorado en Bioquímica, Universidad Nacional de Buenos Aires.
- 2) Dr. Carlos Bergara, Delegado Interventor (Supervisor or Comptroller-Delegate) of the Faculty of Medical Sciences.
- 3) Courses offered:
 - a) Pharmacist:
 - 1st year:
General and Special Botany, Applied General Physics, Introduction to Chemistry and Applied Inorganic Chemistry, Mathematics as applied to Pharmacy and Bio-Chemistry.
 - 2nd year:
Organic Chemistry and Synthesis of Organic Medicines, Pharmacognosia (first part), Analytical chemistry, general and Applied to Inorganic Medicines.
 - 3rd year:
Organic Chemistry and Synthesis of Organic Medicines, Pharmacognosia (2nd part), Quantitative Analytical Chemistry of Inorganic Medicines, Galenic Pharmacy, Chemical-Pharmaceutical Industries.
 - 4th year:
Magistral Pharmacy and Attested Posology, History, Legislation and Pharmaceutical Ethics, Zooparasitology, Hygiene and General Microbiology, Functional Analytical Chemistry of Organic Medicines, Bromatology.
 - b) Doctor in Bio-Chemistry and Pharmacy.
 - 1st year:
Bromatology, Physics-chemistry applied to Biology, Functional Analytical Chemistry of Organic Medicines (1st course), Biological Chemistry (1st course) and clinical analysis as complementary, Anatomy and Physiology (compared).

2nd year:

Functional Analytical Chemistry of Organic Medicines, Biological Chemistry (2nd course) and clinical analysis, Toxicology and Legal Chemistry, Compared histology, Pharmacodynamics, Special Microbiology (Serums and vaccines), Argentine Pharmacology and Phytochemistry.

- 4) 40 professors.
- 5) 1076 students.
- 6) 4 years for Pharmacy Degree and two more for Doctorate in Bio-Chemistry.
- 7) 1822.
- 8) Part of Universidad Nacional de Buenos Aires.
- 9) National Pharmacist, Doctor in Bio-Chemistry.

Tucuman

- 1) Facultad de Farmacia y Bioquímica, Universidad Nacional de Tucuman, Tucuman, Argentina (Ayacucho 482).

- 2) Dr. Jose M. Rodriguez, Delegado Interventor (Comptroller-Delegate).

- 3) Courses:

1st year:

General Botany, Biology, Physics applied to Inorganic Chemical Pharmacy.

2nd year:

Pharmacognosia, Qualitative Organic Analytical Chemistry, Microbiology (general) and Microbiological Methods.

3rd year:

Cyclic Organic Qualitative Analytical Chemistry, Hygiene, Pharmaceutical Technique (1st part).

4th year:

Pharmaceutical Technique (2nd part), Organic Analytical Chemistry, Assay of Strength of Medicines, Bromatology, History of Pharmacy and Legislation, Biological Physics, Static Biological Chemistry, Parasitology, Human Microbiology, Clinical Analyses, Dynamic Biological Chemistry, Pathological Anatomy, General Anatomy, Histology, Toxicology and Pharmacodynamics, Industrial Microbiology.

- 4) Pharmacy: 13, Bio-Chemistry: 13.
- 5) 300 students.
- 6) Four years.
- 7) About 1915.
- 8) Forms part of the Universidad Nacional de Tucuman.
- 9) National Pharmacist, Doctor in Bio-Chemistry.

LaPlata

- 1) Facultad de Quimica y Farmacia Universidad Nacional de la Plata. Calle 47 esq. 115, LaPlata, Argentina.
 - 2) Dr. Carlos Alberto Castro, Comptroller-Delegado (Dean).
 - 3) Courses are offered in Theory and Practice, and are compulsory.
 - 4) 13 professors.
 - 5) 371 students.
 - 6) Four years.
 - 7) 1920.
 - 8) Part of the Universidad Nacional de La Plata.
 - 9) National Pharmacist Degree.
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Cordoba

- 1) Escuela de Farmacia y Doctorado en Bioquimica, Universidad Nacional de Cordoba, Cordoba, Argentina.
 - 2) Dr. Alberto Cascon.
 - 3) Courses:
 - a) Pharmacist:
 - 1st year:

Pharmaceutical General and Inorganic Chemistry, Pharmaceutical Physics, Mineralogy and Pharmaceutical Zoology.
 - 2nd year:

Qualitative General Analytical Chemistry, Pharmaceutical Organic Chemistry, Botany and Vegetal Micrography.
 - 3rd year:

Quantitative General Analytical Chemistry, Pharmaceutical Organic Chemistry (2nd course), Microbiology, Pharmaceutical Technique.
 - 4th year:

Analytical Chemistry of Medicines, Bromatological Hygiene, Pharmaceutical Technique (2nd part), Pharmacognosy.
 - b) Doctorate in Pharmacy and Bio-Chemistry:
 - 5th year:

Anatomy and Physiology (compared), General Biological Chemistry, Normal Histology, Applied Analytical Chemistry.
 - 6th year:

Pathological Histology, Biological Analytical Chemistry, Bromatological Hygiene, Applied Analytical Chemistry, Microbiology (Serology and Analysis), Pharmacology.
- For regular students attendance on practical courses is compulsory.

- 4) Titular professors: 7 in School of Pharmacy; 9 in Doctorate in Bio-Chemistry.
- 5) In 1947 division of students was as follows:
First year: 165, Second year: 145, Third year: 120, Fourth year: 90, Fifth year: 60, Sixth year: 40.
- 6) Four years for Pharmacist Degree; 2 more years for Bio-Chemist Degree.
- 7) 1877.
- 8) Dependent on the Universidad Nacional de Cordoba, Facultad de Ciencias Medicas.
- 9) Degree is "National" (Pharmacist or Bio-Chemist).

New additions to the headquarters staff of the American Pharmaceutical Association are Harold V. Darnell and Dr. Eleanor Poland. Mr. Darnell, a graduate of Purdue University, School of Pharmacy, served the Association as second Vice President and ex officio member of the Council during the 1946-47 term. He served the Indiana Pharmaceutical Association as Executive Secretary and Editor of the *Indiana Pharmacist* since 1939. Following his graduation he became a pharmaceutical chemist in the Food and Drug Division of the Indiana State Board of Health and in 1937 was appointed director of the Division. He belongs to and has been active in many state and national organizations of a scientific and administrative character.

Dr. Poland was a student at Ratcliffe College and Harvard University and received the Ph. D. from the first named institution. She has served on the staff of the Brookings Institution and in the Legislative Reference Service of the Library of Congress. During World War II she was special assistant to Dr. R. P. Fischelis while he served as Director of the Chemical, Drugs and Health Supplies Division of the Office of Civilian requirements. Her latest assignment was with the U. S. Public Health Service.

These appointments demonstrate the good judgment of the Council. They have been made possible through the increased income provided by the increase of dues which became effective on January 1, of this year, all of which is the result of an active and aggressive leadership in the Secretary's

office. It is high time that Dr. Fischelis be provided with means and the personnel to carry out the ever expanding program which is primarily a child of his own. The effectiveness of the work of an association, like the work of an educational institution, depends upon an ever expanding program.—
Editor.

Rear Admiral Clifford A. Swanson (MC) USN, Surgeon General of the Navy, announced that 480 pharmacy officers are needed to fill established billets in 240 inactive volunteer medical reserve divisions. Under present law these officers must be drawn from men currently holding commissions in the Naval Reserve. However, Admiral Swanson pointed out that professionally qualified pharmacists holding line or other staff corps commissions may be reclassified in the Medical Service Corps (Reserve Pharmacy) and accepted now into these reserve divisions.

Admiral Swanson also said that the pharmacy section of the recently created Medical Service Corps has opportunities at this time for more than 50 pharmacy officers in the regular service. These officers will be assigned to Naval Hospitals, Naval Medical Supply Depots, Naval Hospital Corps Schools, District Medical Offices, Marine Corps activities and possibly on hospital ships.

The Surgeon General said it is contemplated that pharmacy officers will supervise operating pharmacy services; have assignments in connection with the procurement, distribution, storage and issuance of medical supplies; teaching in Naval Hospital Corps Schools and other similar duties which would utilize their professional training.

Under present law and regulations, active and inactive naval reserve officers, holding B. S. degrees in pharmacy may apply for change of classification and immediate integration into the Medical Service Corps of the regular Navy, in their present temporary rank. Admiral Swanson said that while applications can not be accepted at this time from other than reserve or temporary officers, legislation has been proposed which, if enacted into law, will permit qualified B. S. degree pharmacists under 32 years of age, to apply for commissioning in the regular Navy, directly from civilian status.

The Surgeon General urged all qualified pharmacists, holding commissions in any branch of the Naval Reserve, to consider his announcement an invitation to apply for designation as a pharmacy officer in the Medical Service Corps of the regular Navy.

Interested reserve officers may submit a letter of application to the *chief of Naval Personnel via the commandant of the Naval district in which they maintain residence.*

INSTITUTIONS HOLDING MEMBERSHIP IN THE AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY (Concluded)

New Jersey

Rutgers University, The State University of New Jersey, New Jersey College of Pharmacy, Newark (1922)
Thomas D. Rowe, Dean

New York

University of Buffalo, School of Pharmacy, Buffalo. (1909)
A. B. Lemon, Dean

Columbia University, College of Pharmacy of the City of New York. (1939)
Charles W. Ballard, Dean

Fordham University, College of Pharmacy, New York. (1939)
James H. Kidder, Dean

Union University, Albany College of Pharmacy, Albany. (1945)
Francis J. O'Brien, Dean

Long Island University, Brooklyn College of Pharmacy, Brooklyn (1939).
Hugo H. Schaefer, Dean.

North Carolina

University of North Carolina, School of Pharmacy, Chapel Hill. (1917)
Marion L. Jacobs, Dean

North Dakota

North Dakota Agricultural College, School of Pharmacy, Fargo. (1922)
William F. Sudro, Dean

Ohio

Ohio Northern University, College of Pharmacy, Ada. (1925)
Rudolph H. Raabe, Dean

University of Cincinnati, Cincinnati College of Pharmacy. (1947)
Lyle Klotz, Dean

The Ohio State University, College of Pharmacy, Columbus. (1900)
Bernard V. Christensen, Dean

University of Toledo, College of Pharmacy, Toledo. (1941)
Charles H. Larwood, Dean

Western Reserve University, School of Pharmacy, Cleveland. (1902)
Arthur P. Wyss, Dean

Oklahoma

University of Oklahoma, School of Pharmacy, Norman. (1905)
D. B. R. Johnson, Dean

Oregon

Oregon State College, School of Pharmacy, Corvallis. (1915)
George E. Crossen, Dean

Pennsylvania

Duquesne University, School of Pharmacy, Pittsburgh. (1927)
Hugh C. Muldoon, Dean

Philadelphia College of Pharmacy and Science, Philadelphia. (1909)
Ivor Griffith, Dean

Temple University, School of Pharmacy, Philadelphia. (1928)
H. Evert Kendig, Dean

University of Pittsburgh, Pittsburgh College of Pharmacy, Pittsburgh. (1900)

Edward C. Reif, Dean

Philippines

University of the Philippines, College of Pharmacy, Manila. (1917)
Patrocinio Valenzuela, Dean

Puerto Rico

University of Puerto Rico, College of Pharmacy, Rio Piedras. (1926)
Luis Torres-Diaz, Dean

Rhode Island

Rhode Island College of Pharmacy and Allied Sciences, Providence. (1926)
W. Henry Rivard, Dean

South Carolina

Medical College of the State of South Carolina, Charleston. (1940)
William A. Prout, Director

University of South Carolina, School of Pharmacy, Columbia. (1908)
Emery T. Motley, Dean

South Dakota

South Dakota State College, Division of Pharmacy, Brookings. (1908)
Flovd J. LeBlanc, Dean

Tennessee

University of Tennessee, School of Pharmacy, Memphis. (1914)
Robert L. Crowe, Dean

Texas

University of Texas, College of Pharmacy, Austin. (1926)
Henry M. Burlage, Dean

Virginia

Medical College of Virginia, School of Pharmacy, Richmond. (1908)
R. Blackwell Smith, Jr., Dean

Washington

State College of Washington, School of Pharmacy, Pullman. (1912)
Pearl H. Dirstine, Dean

University of Washington, College of Pharmacy, Seattle. (1908)
Forest J. Goodrich, Dean

West Virginia

West Virginia University, College of Pharmacy, Morgantown. (1920)
J. Lester Hayman, Dean

Wisconsin

University of Wisconsin, School of Pharmacy, Madison. (1900)
Arthur H. Uhl, Director

FELLOWSHIPS IN PHARMACY

To meet the demonstrated need for trained teachers and researchers in the field of pharmacy, the American Foundation for Pharmaceutical Education announces a limited number of Fellowships for students seeking graduate degrees in pharmaceutical subjects.

These Fellowships are open to students (men or women) qualified for registration in approved graduate schools (or colleges) for one or more of the following major fields:

PHARMACY

PHARMACEUTICAL CHEMISTRY

PHARMACOLOGY

PHARMACOGNOSY

(or closely related subjects)

Each Fellow will receive from the Foundation a stipend to cover the year of his appointment, plus an allowance for tuition and miscellaneous term bills. Fellowships are renewable for one year.

For further information concerning Foundation Fellowships, including application forms, write directly to the

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